

PowerFlex 750-Series AC Drives

Original Instructions



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Summary of Changes

This publication contains new and updated information as indicated in the following table.

Topic	Page
Added information about the Integrated Safety - Safe Torque Off safety option.	3, 7, 132, 134
Removed a footnote from the table that describes Filtering and CM Cap Configuration options. Jumpers are no longer included and 480V drives can now use Code A or Code J.	6

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
PowerFlex 750-Series Drive Installation Instructions, publication 750-IN001	Provides detailed information on how to install PowerFlex® 750-Series AC drives.
PowerFlex 750-Series Programming Manual, publication 750-PM001	Provides detailed information on I/O, control, and feedback options; parameters and programming; faults, alarms, and troubleshooting.
PowerFlex 20-HIM-A6 and 20-HIM-C6S HIM (Human Interface Module) User Manual, publication 20HIM-UM001	Provides detailed information on HIM components, operation, and features.
PowerFlex 755 Integrated Safety - Safe Torque Off Option Module User Manual, publication 750-UM004	Provides detailed information on how to install and use the Integrated Safety - Safe Torque Off option module.
PowerFlex 750-Series Safe Torque Off User Manual, publication 750-UM002	Provides detailed information on how to install and use the Safe Torque Off option module.
Safe Speed Monitor Option Module for PowerFlex 750-Series AC Drives Safety Reference Manual, publication 750-RM001	Provides detailed information on how to install and use the Safe Speed Monitor option module.
PowerFlex 7-Class Network Communication Adapter User Manuals, publication 750COM-UM	These publications provide detailed information on to configure, use, and troubleshoot PowerFlex 750-Series communication option modules and adapters. To display a list of the available adapters, enter 750com-um in the search field.
PowerFlex Dynamic Braking Resistor Calculator Application Technique, publication PFLEX-AT001	Provides information to help you understand dynamic braking and how to apply dynamic braking to drive systems.
Wiring and Grounding Guidelines for PWM AC Drives, publication DRIVES-IN001	Provides basic information to properly wire and ground PWM AC drives.
Preventive Maintenance of Industrial Control and Drive System Equipment Service Bulletin, publication DRIVES-TD001	Provides information for preventative maintenance and periodic inspection of drive systems.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-State Control, publication SGI-1.1	Provides general guidelines for the application, installation, and maintenance of solid-state control.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.rockwellautomation.com/global/certification/overview.page	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at <http://www.rockwellautomation.com/global/literature-library/overview.page>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Product Overview

The PowerFlex 750-Series is a robust family of AC drives that provide ease of use, flexibility, and performance for various industrial applications. PowerFlex 753 drives provide general-purpose control for applications up to 400 Hp and 270 kW. PowerFlex 755 drives provide maximum flexibility and performance up to 2000 Hp and 1500 kW.

Maximize your productivity by taking advantage of these key features that are offered in the PowerFlex 750-Series drives:

- **DeviceLogix™** – Embedded control technology that supports the manipulation of discrete outputs and drive control functions, while using discrete inputs and drive status information onboard the drive.
- **Predictive Diagnostics** – Tracks information that affects the life of the drive cooling fans and relay outputs. The drive can also be programmed to monitor the runtime hours for machine or motor bearings.
- **Option Cards** – Each drive has a slot-based architecture. Supported hardware control options are available for both products, to help reduce your inventory and spare parts requirements.
- **Safe Torque Off, Safe Speed Monitor, and Integrated Safety - Safe Torque Off** – Provides a choice for safety levels depending on your application requirements.
- **Communication** – The PowerFlex 755 drives come with a built-in Ethernet port. Ethernet can easily be added to the PowerFlex 753 drives with a communication module.
- **I/O** – Option cards are available for additional analog and digital I/O. The PowerFlex 753 drives come with built-in I/O that can also be expanded with option cards.
- **Packaging** – Factory and field-installable enclosure options are available to meet most environmental requirements. Options include Open Type and flange mount to support cabinet mount requirements, extra protection wall-mount for harsh environments, and debris hoods and conduit plate kits.
- **Standard Power Structure** – A common power structure is shared to provide the same physical size and power range.



PowerFlex 750-Series Drive Family

This section provides a brief introduction to the different PowerFlex 750-Series drives.



Wall Mount Frames 1...7

IP00/IP20, NEMA/UL Type Open Drive

Includes a DC link choke on all Frames and internal brake transistor, standard on Frames 1...5, and optional on Frames 6 and 7.



Floor Mount Frames 8...10

IP20, NEMA/UL Type 1 Drive (2500 MCC style cabinet)

Includes a DC link choke, integrated AC line fuses, and roll-out design. Hood that is shown on top of cabinets is optional. To order the hood, see [page 135](#) for information.



Floor Mount Frames 8...10

IP20, NEMA/UL Type 1 Drive with Options (2500 MCC style cabinet)

Includes a DC link choke, integrated AC line fuses, roll-out design, and option bay for control/protection devices.



Roll-out Design
(Frame 8 shown)

A roll-out cart is required for Frames 8...10 drives and Frame 9...10 option bay chassis. The roll-out cart has an adjustable curb height of 0...182 mm (0...7.2 in.) and curb offset/reach of 0...114 mm (0...4.5 in.).

See [page 135](#) for information to order the roll-out cart.

Catalog Number Explanation

1...3 4 5 6 7 8...10 11 12 13 14 15 16 17 18
20G 1 A N D 248 A A O N N N N N -LD-P3-P11...
a b c d e f1...f4 g h i Cabinet Options (21G)

Drive		
Code	Type	Frames
20F	PowerFlex 753 Drive	1...7
20G	PowerFlex 755 Drive	1...10
21G	PowerFlex 755 Drive with Options	8...10

Future Use		
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Input Type		
Code	Description	Frames
1	AC input with precharge, includes DC terminals	1...5 8 ⁽¹⁾ ...10
4	DC input with precharge	5...10
A	AC input with precharge, no DC terminals	6...8 ⁽²⁾

Enclosure		
Code	Description	Frames
R	IP20, NEMA/UL Type Open, Frame 1	1
F ⁽¹⁾	Flange (NEMA/UL Type 4X/12 back)	2...5
G	IP54, NEMA/UL Type 12	2...7
N ⁽²⁾	IP20/IP00, NEMA/UL Type Open	2...7
B ⁽³⁾	IP20, NEMA/UL Type 1, 600 mm (23.6 in.) deep, Standard cabinet color (RAL 7032)	8...10
J ⁽³⁾	IP54, UL Type 12, 800 mm (31.5 in.) deep, Standard cabinet color (RAL 7032)	8...10
K ⁽³⁾	IP54, NEMA 12, 2500 MCC style cabinet and options with MCC Power bus, 800 mm (31.5 in.) deep, Standard cabinet color (RAL 7032)	8...10
L ⁽³⁾	IP20, NEMA/UL Type 1, 800 mm (31.5 in.) deep, Standard cabinet color (RAL 7032)	8...10
P ⁽³⁾	IP20, NEMA/UL Type 1, 2500 MCC style cabinet and options with MCC Power bus, 800 mm (31.5 in.) deep, Standard cabinet color (RAL 7032)	8...10
W ⁽³⁾	IP20, NEMA/UL Type 1, 2500 MCC style cabinet and options with MCC Power bus, 800 mm (31.5 in.) deep, CenterLine 2100 gray (ASA49)	8...10
Y ⁽³⁾	IP54, NEMA 12, 2500 MCC style cabinet and options with MCC Power bus, 800 mm (31.5 in.) deep, CenterLine 2100 gray (ASA49)	8...10
T	IP00, UL Open Type without control POD	8...10

- (1) Code 1 is only valid for Frame 8 with the enclosure code T.
- (2) The DC bus bar kit (20-750-DCBB1-Fx) is available for Frame 5 6 and 7 AC input drives requiring DC bus terminals.

Voltage Rating		
Code	Voltage	
C	400V AC/540V DC	
D	480V AC/650V DC	
E	600V AC/810V DC	
F	690V AC/932V DC (not UL Listed)	

ND Rating							
400V, 50 Hz Input							
Code	Amps	kW	Frame				R
			Enclosure Code				
			B, J, L, T	F	G	N	K, P, W, Y
2P1	2.1	0.75					
3P5	3.5	1.5					
5P0	5.0	2.2					
8P7	8.7	4		2	2	2	1
011	11.5	5.5					
015	15.4	7.5					
022	22	11					
030	30	15					
037	37	18.5		3	3	3	
043	43	22					
060	60	30	-	4	4	4	-
072	72	37					
085	85	45			5	5	
104	104	55		5			
140	140	75				6	
170	170	90					6
205	205	110					
260	260	132					
302	302	160					
367	367	200			7	7	
456	456	250					
460	460	250	8	-	-	-	8 ⁽²⁾
477	477	270	-	(1)	-	7	-
540	540	315					
567	567	315					
650	650	355	8				8 ⁽²⁾
750	750	400					
770	770	400					
910	910	500					
1K0	1040	560					
1K1	1090	630					
1K2	1175	710					
1K4	1465	800					
1K5	1480	850					
1K6	1590	900					
2K1	2150	1250	10				10 ⁽²⁾

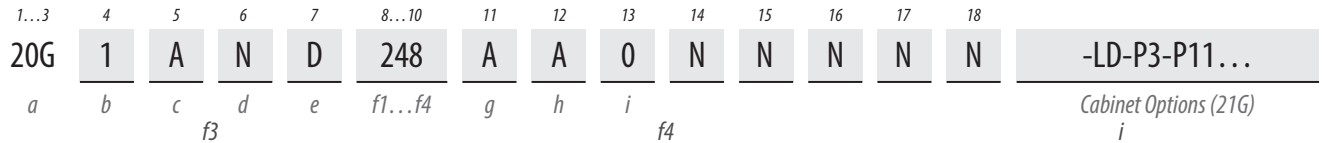
ND Rating							
480V, 60 Hz Input							
Code	Amps	Hp	Frame				R
			Enclosure Code				
			B, J, L, T	F	G	N	K, P, W, Y
2P1	2.1	1					
3P4	3.4	2					
5P0	5.0	3					
8P0	8.0	5					
011	11	7.5					
014	14	10					
022	22	15					
027	27	20					
034	34	25		3	3	3	
040	40	30					
052	52	40	-	4	4	4	-
065	65	50					
077	77	60			5	5	
096	96	75		5			5
125	125	100				6	
156	156	125					6
186	186	150					
248	248	200			(1)		
302	302	250				7	
361	361	300					7
415	415	350					
430	430	350	8	-	-	-	8 ⁽²⁾
477	477	400	-	(1)	-	7	-
485	485	400					
545	545	450					
617	617	500	8				8 ⁽²⁾
710	710	600					
740	740	650					
800	800	700					
960	960	800					
1K0	1045	900					
1K2	1135	1000					
1K3	1365	1100					
1K4	1420	1250					
1K5	1525	1350					
2K0	2070	1750	10				10 ⁽²⁾

ND Rating							
480V, 60 Hz Input							
Code	Amps	Hp	Frame				R
			Enclosure Code				
			B, J, L, T	F	G	N	K, P, W, Y
2P1	2.1	1					
3P4	3.4	2					
5P0	5.0	3					
8P0	8.0	5					
011	11	7.5					
014	14	10					
022	22	15					
027	27	20					
034	34	25		3	3	3	
040	40	30					
052	52	40	-	4	4	4	-
065	65	50					
077	77	60			5	5	
096	96	75		5			5
125	125	100				6	
156	156	125					6
186	186	150					
248	248	200			(1)		
302	302	250				7	
361	361	300					7
415	415	350					
430	430	350	8	-	-	-	8 ⁽²⁾
477	477	400	-	(1)	-	7	-
485	485	400					
545	545	450					
617	617	500	8				8 ⁽²⁾
710	710	600					
740	740	650					
800	800	700					
960	960	800					
1K0	1045	900					
1K2	1135	1000					
1K3	1365	1100					
1K4	1420	1250					
1K5	1525	1350					
2K0	2070	1750	10				10 ⁽²⁾

- (1) For Frames 6 and 7, a user-installed flange kit (20-750-FLNG4-Fx) is available to convert a Code N drive that provides a NEMA/UL Type 4X/12 back.
- (2) Available as a drive with options (21G).

ND Rating							
480V, 60 Hz Input							
Code	Amps	Hp	Frame				R
			Enclosure Code				
			B, J, L, T	F	G	N	K, P, W, Y
2P1	2.1	1					
3P4	3.4	2					
5P0	5.0	3					
8P0	8.0	5					
011	11	7.5					
014	14	10					
022	22	15					
027	27	20					
034	34	25		3	3	3	
040	40	30					
052	52	40	-	4	4	4	-
065	65	50					
077	77	60			5	5	
096	96	75		5			5
125	125	100				6	
156	156	125					6
186	186	150					
248	248	200			(1)		
302	302	250				7	
361	361	300					7
415	415	350					
430	430	350	8	-	-	-	8 ⁽²⁾
477	477	400	-	(1)	-	7	-
485	485	400					
545	545	450					
617	617	500	8				8 ⁽²⁾
710	710	600					
740	740	650					
800	800	700					
960	960	800					
1K0	1045	900					
1K2	1135	1000					
1K3	1365	1100					
1K4	1420	1250					
1K5	1525	1350					
2K0	2070	1750	10				10 ⁽²⁾

- (1) For Frames 6 and 7, a user-installed flange kit (20-750-FLNG4-Fx) is available to convert a Code N drive that provides a NEMA/UL Type 4X/12 back.
- (2) Available as a drive with options (21G).



ND Rating									
600V, 60 Hz Input									
Code	Amps	Hp	Frame						
			Enclosure Code						
			B, J, L, T	F	G	N	K, P, W, Y	R	
1P7	1.7	1							
2P7	2.7	2							
3P9	3.9	3							
6P1	6.1	5		3	3	3			
9P0	9	7.5							
011	11	10							
012 ⁽¹⁾	12	10		-	6	6			
017	17	15		3	3	3			
018 ⁽¹⁾	18	15		-	6	6			
022	22	20		3	3	3			
023 ⁽¹⁾	23	20		-	6	6			
024 ⁽¹⁾	24	20							
027	27	25		4	4	4			
028 ⁽¹⁾	28	25		-	6	6			
032	32	30		4	4	4			
033 ⁽¹⁾	33	30		-	6	6			
041	41	40		5	5	5			
042 ⁽¹⁾	42	40		-	6	6			
052	52	50		5	-	5			
053 ⁽¹⁾	53	50							
063	63	60							
077	77	75							
099	99	100							
125	125	125							
144	144	150							
192	192	200							
242	242	250							
289	289	300							
295	295	300							
355	355	350							
395	395	400							
435	435	450							
460	460	500							
510	510	500							
595	595	600							
630	630	700							
760	760	800							
825	825	900							
900	900	950							
980	980	1000							
1K1	1110	1100							
1K4	1430	1400							

- (1) Required for uncontrolled common DC bus applications. Optional for all AC applications.
- (2) For Frames 6 and 7, a user-installed flange kit (20-750-FLNG4-Fx) is available to convert a Code N drive that provides a NEMA/UL Type 4X/12 back.
- (3) Available as a drive with options (21G).

ND Rating									
690V, 50 Hz Input (not UL Listed)									
Code	Amps	kW	Frame						
			Enclosure Code						
			B, J, L, T	F	G	N	K, P, W, Y	R	
012	12	7.5							
015	15	11							
020	20	15							
023	23	18.5							
030	30	22							
034	34	30							
046	46	37							
050	50	45							
061	61	55							
082	82	75							
098	98	90							
119	119	110							
142	142	132							
171	171	160							
212	212	200							
263	263	250							
265	265	250							
330	330	315							
370	370	355							
415	415	400							
460	460	450							
500	500	500							
590	590	560							
650	650	630							
710	710	710							
765	765	750							
795	795	800							
960	960	900							
1K0	1040	1000							
1K4	1400	1400							

- (1) For Frames 6 and 7, a user-installed flange kit (20-750-FLNG4-Fx) is available to convert a Code N drive that provides a NEMA/UL Type 4X/12 back.
- (2) Available as a drive with options (21G).

g

Filtering and CM Cap Configuration		
Code	Filtering	Default CM Cap Connection
A	Yes	Jumper removed
J	Yes	Jumper installed

h

Dynamic Braking ⁽¹⁾		
Code	Internal Resistor ⁽²⁾	Internal Transistor ⁽³⁾
A	No	Yes
N	No	No

- (1) Not available on Frames 8...10, specify Code N.
- (2) User-installed internal resistor kits (20-750-DB1-Dx) are available for Frame s1 and 2.
- (3) Standard on Frames 1...5, optional on Frames 6 and 7.

Door Mounted HIM (Frame s 8...10)	
Code	Operator interface
0	No door mounted HIM
2	Enhanced LCD, full numeric, IP20
4	Enhanced LCD, full numeric, IP66 NEMA Type 4X/12

PowerFlex 755 Drive with Options (21G)
Required Selections

Code	Option	Frames	Type
LD	Light duty	8...10	System Overload Duty Cycle ⁽¹⁾
ND	Normal duty		
HD	Heavy duty		
P3	Input thermal magnetic circuit breaker	8...10	Power Disconnect ⁽¹⁾
P5	Input non-fused molded case disconnect switch	8 Only	
P14	Wiring-only bay	8...10	Wiring Only Bay

(1) Only one option of this type can be selected.

PowerFlex 755 Drive with Options (21G)
Additional Selections

Code	Option	Frames	Type
P11	Input contactor	Only 8	Contactors ⁽¹⁾⁽²⁾
P12	Output contactor		
L1	3% Input reactor	8 and 9	Reactors ⁽¹⁾
L2	3% Output reactor		
L3	5% Input reactor	Only 8	
L4	5% Output reactor		
P20	1200 A bus	8...10	MCC power bus capacity ⁽¹⁾
P22	2000 A bus		
P24	3000 A bus		
P30	UPS control bus, DC input with precharge only	8...10	UPS control bus
X1	Auxiliary transformer (500VA available), IP20 cabinet only	Only 8 ⁽³⁾	Auxiliary power

- (1) Only one option of this type may be selected.
- (2) Contactor options are not available for systems with MCC power bus.
- (3) Standard on all other cabinet configurations.

Certifications and Specifications

This section provides information for certifications and specifications.

Certifications

Certification	Description
ABS	American Bureau of Shipping Certificate 11-HS743429
c-UL-us	Listed to UL508C and CSA22.2 No. 14 (does not apply to 21G drives with enclosure code P or W).
CE	In conformity with these European Directives EMC Directive EN 61800-3 Low Voltage Directive EN 61800-5-1 ATEX Directive (94/9/EC and 2014/34/EU) EC-Type-Examination Certificate Number TÜV 12 ATEX 7328 X EN 50495
EPRI/SEMI F47	Electric Power Research Institute Certified compliant with the following standards SEMI F47 IEC 61000-4-34
EAC	Low Voltage TP TC 004/2011 EMC TP TC 020/2011
Functional Safety	TÜV Rheinland – Certification applies to 20-750-S, 20-750-S1, and 20-750-S3 Safety Options when installed in drive. Standards applied EN 61800-3, EN 61508 PARTS 1-7 EN 61800-5-1, EN 62061 EN 61800-5-2, EN 60204-1 EN ISO 13849-1
KCC	KCC-REM-RAA-20F-A, KCC-REM-RAA-20G-A, MSIP-REM-RAA-20F-C KCC-REM-RAA-20F-B, KCC-REM-RAA-20G-B, MSIP-REM-RAA-20F-D KCC-REM-RAA-20G-C, MSIP-REM-RAA-20G-D See the certificate of registration for specific drive catalog numbers that have this certification. ⁽¹⁾
Lloyd's Register	Lloyd's Register Type Approval Certificate 11/60008
RCM	Australian Communications and Media Authority In conformity with the following items Radiocommunications Act: 1992 Radiocommunications Standard: 2008 Radiocommunications Labeling Notice: 2008 Standards applied EN 61800-3
RINA	RINA Certificate ELE349811CS

(1) See the product certifications website, <http://www.rockwellautomation.com/global/certification/overview.page>, for declarations of conformity, certificates, and other certification details.

Environmental Specifications (Continued)

Category	Specification			
Vibration – operating	Frames 1 and 2 Frames 3...5 Frames 6 and 7 Frames 8...10	1.000 mm (0.040 in.) displacement, 2 g peak 1.000 mm (0.040 in.) displacement, 1.5 g peak 1.000 mm (0.040 in.) displacement, 1 g peak Power core, drive in cabinet with option bay – 1.000 mm (0.040 in.) displacement, 1 g peak		
Vibration – packaged for shipment Sinusoidal loose load	Frames 1...5 Frames 6...10	20.0 mm (0.8 in.) peak to peak, 2...5.186 Hz; 1.1 g peak from 5.186...20 Hz Meets ISTA 2B packaging standards		
Vibration – packaged for shipment Random secured	Frames 1...5 Frames 6...10	Frequency (Hz) 1 4 16 40 80 200	PSD (g ² /Hz) 0.00005 0.01 0.01 0.001 0.001 0.00001 Meets International Safe Transit Association (ISTA) test procedure 2B.	
Required airflow	Frame 1 and 2 3 4 5 6	Total fan airflow 84.95 m ³ /h (50 CFM) 135.92 m ³ /h (80 CFM) 543.68 m ³ /h (320 CFM) 883.49 m ³ /h (520 CFM) 856.30 m ³ /h (504CFM)	Frame 7 8 9 10	Total fan airflow 1284.45 m ³ /h (756 CFM) 2293.67 m ³ /h (1350 CFM) 4587.33 m ³ /h (2700 CFM) 6880.99 m ³ /h (4050 CFM)
Sound IMPORTANT: Sound pressure level is measured at 2 m (6.7 ft).	Frame 1 and 2 3 4 5 6	Sound level 63 dB 64 dB 72 dB 77 dB 73 dB	Frame 7 8 9 10	Sound level 74 dB 79 dB 79 dB 83 dB
Surrounding environment pollution degree Pollution Degree 1 and 2 Pollution Degree 3 and 4	See page 68 for descriptions of each pollution degree rating. All enclosures acceptable. Enclosure that meets or exceeds IP54, NEMA/UL Type 12 required.			

(1) Maximum surrounding air temperature of 50 °C (122 °F) with derating. See [Derating Guidelines on page 17](#).

Technical Specifications

Category	Specification	Motor Voltage			
		380/400	480V	600V	690V
Protection	AC input overvoltage trip	576V AC	576V AC	825V AC	825V AC
	AC input undervoltage trip	250V AC	300V AC	400V AC	400V AC
	Bus overvoltage trip	815V DC	815V DC	1167V DC	1167V DC
	Bus undervoltage shutoff Frames 1...7 Frames 8...10	200V DC 400V DC	200V DC 400V DC	200V DC (Frames 3...7) 400V DC	200V DC (Frames 6 and 7) 400V DC
	Nominal bus voltage (full load)	540V DC	648V DC	810V DC	932V DC
	Drive overcurrent trip Software overcurrent trip Instantaneous current limit Hardware overcurrent trip	200% of drive rated 100% of 3 s rating (158...210%) 143% of 3 s rating (215...287%)			
	Line transients	Up to 6000V peak per IEEE C62.41-1991			
	Control logic noise immunity	Showering arc transients up to 1500V peak			
	Power ride-through	15 ms at full load			
	Logic control ride-through	0.5 s min, 2 s typical			
	Ground fault trip	Phase-to-ground on drive output			
	Short circuit trip	Phase-to-phase on drive output			

Technical Specifications (Continued)

Category	Specification			
Electrical	AC input voltage tolerance	See Input Voltage Tolerance on page 13 for full power and operating range.		
	Frequency tolerance	47...63 Hz		
	Input phases	Three-phase input provides full rating for all drives. For Frames 1...7 (output current up to 456 A), single-phase operation provides up to 50% of rated current at 25 °C (77 °F) surrounding temperature. Single-phase operation is not recommended for Frames 8 and larger.		
	DC input voltage tolerance	±10% of nominal bus voltage (see Nominal bus voltage (full load) on page 10)		
	Displacement power factor	0.98 across entire speed range		
	DC link impedance	≤ 4%		
	Efficiency	97.5% at rated amps, nominal line volts		
	Maximum short circuit rating	200,000 A RMS symmetrical (20F and 20G drives only)		
	Actual short circuit rating	Determined by AIC rating of installed fuse/circuit breaker. See page 56 for 21G drives.		
	Drive to motor power ratio Min Max	Recommended not less than 1:2 ratio Recommended not greater than 2:1 ratio		
	Brake IGBT rating	100% of motor-rated torque		
	Control POD current draw	5 A		
	Digital inputs Nominal Maximum High state Low state	DC 24V DC 30V DC 20...24V DC 0...5V DC	AC 120V AC 132V AC 100...132V AC 0...30V AC	
	PTC inputs Standard Trip resistance Nominal resistance Reset resistance Short circuit trip resistance	PowerFlex 753 MCB N/A ⁽¹⁾ 3.1 kΩ 1.8 kΩ 2.2 kΩ N/A ⁽²⁾	22-Series I/O option module DIN 44082 3.1 kΩ 1.8 kΩ 2.2 kΩ 300 Ω	ATEX option module for 11-Series I/O option module IEC 6094-8 3.2 kΩ 1.6 kΩ N/A ⁽³⁾ 100 Ω
	Battery	User-installed CR1220 lithium coin cell battery provides power to the real-time clock (optional, not supplied). Preserves the clock setting in the event power to the drive is lost or cycled. Approximate life is 4.5 years with drive unpowered, or lifetime if drive is powered.		

(1) Not designed to a standard.

(2) No short circuit fault.

(3) No hysteresis, fault is latched.

Technical Specifications (Continued)

Category	Specification		
Control	Method	Sine coded PWM with programmable carrier frequency. Ratings apply to all drives.	
	Carrier frequency	Default settings Frames 1...3 4 kHz Frames 4...10 2 kHz Settings Frames 1...6 2, 4, 8, 12 kHz Frame 7 2, 4, 8 kHz Frames 8...10 2, 4 kHz	
	Output voltage range	0 to rated motor voltage	
	Output frequency range	0...325 Hz at 2 kHz carrier 0...590 Hz at 4 kHz carrier	
	Frequency accuracy Digital input Analog input	Within $\pm 0.01\%$ of set output frequency Within $\pm 0.4\%$ of maximum output frequency	
	Frequency control	Speed regulation – with slip compensation (V/Hz and Sensorless Vector modes) 0.5% of base speed across 40:1 speed range, 40:1 operating range	
	Speed control	Without feedback (Flux Vector mode), 0.1% of base speed across 100:1 speed range, 120:1 operating range, 50 rad/s bandwidth	
		With feedback (Flux Vector mode), 0.001% of base speed across 100:1 speed range, 1000:1 operating range, 190 rad/s bandwidth	
	Torque regulation	Without feedback (Flux Vector mode), $\pm 5\%$, 600 rad/s bandwidth	
		With feedback (Flux Vector mode), $\pm 2\%$, 2500 rad/s bandwidth	
	Selectable motor control	<ul style="list-style-type: none"> • Standard V/Hz with full custom capability • Sensorless Vector mode with full tuning • Flux Vector mode with and without a feedback device • Induction motor control • Surface-mount permanent magnet motor control with encoder feedback (Frames 1...10)⁽¹⁾ • Surface-mount permanent magnet motor control without encoder feedback (Frames 1...7)⁽¹⁾ • Internal permanent-magnet motor control with encoder feedback (Frames 1...10) • Internal permanent-magnet motor control without encoder feedback (Frames 1...7) 	
	Stop modes	Multiple programmable stop modes including - Ramp, Coast, DC-Brake, Ramp-to-Hold, Fast Braking, and Current Limit Stop.	
	Accel/Decel	Two independently programmable accel and decel times. Each time can be programmed from 0...3600 seconds in 0.1 second increments (0 to motor nameplate speed).	
	S-curve time	Adjustable from 0...100% of ramp time (normal duty rating)	
	Intermittent overload Light duty (only Frames 8...10)	110% overload capability for up to 1 min out of 10 mins	
		Normal duty	110% overload capability for up to 1 min out of 10 mins 150% overload capability for up to 3 s out of 60 s
		Heavy duty	150% overload capability for up to 1 min out of 10 mins 180% overload capability for up to 3 s out of 60 s
Current limit capability	Proactive current limit programmable from 20...160% of rated output current. Independently programmable proportional and integral gain.		
Electronic motor overload protection	Class 10 motor overload protection according to NEC article 430 and motor over-temperature protection according to NEC article 430.126 (A)(2). UL 508C File E59272.		

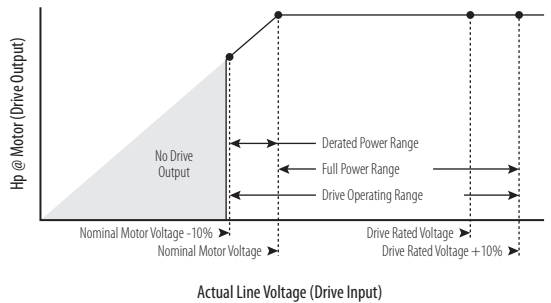
(1) Only PowerFlex 755 drives.

Design Considerations

This section provides information for design considerations.

Input Voltage Tolerance

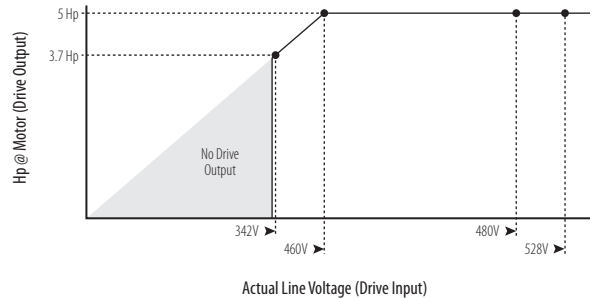
Drive Rating	Nominal Line Voltage	Nominal Motor Voltage	Drive Full Power Range	Drive Operating Range
380...480	380	380	380...528	342...528
	400	400	400...528	
	480	460	460...528	
600...690	600	575	575...759	517...759
	690	660	660...759	
Drive full power range =	Nominal motor voltage to drive-rated voltage + 10%. Rated current is available across the entire drive full-power range.			
Drive operating range =	Lowest nominal motor voltage - 10% to drive-rated voltage + 10%. Drive output is linearly derated when actual line voltage is less than the nominal motor voltage			



EXAMPLE Calculate the maximum power of a 5.0 Hp, 460V motor connected to a 480V-rated drive supplied with 342V actual line voltage input.

- Actual line voltage/nominal motor voltage = 74.3%
- 74.3% x 5.0 Hp = 3.7 Hp
- 74.3% x 60 Hz = 44.6 Hz

At 342V actual line voltage, the maximum power the 5.0 Hp, 460V motor can produce is 3.7 Hp at 44.6 Hz.



IMPORTANT For maximum protection of the drive and its internal components, we recommend the use of semiconductor fuses to other methods of circuit protection. Semiconductor fuses reduce the risk of drive damage from power quality events, and improves machine and process utilization.

Approximate Watts Loss

The following table lists watts loss data for PowerFlex 750-Series drives running at full load, full speed, and default carrier frequency.

Internal watts are the watts that the control structure of the drive dissipates into the cabinet, regardless of mounting style. External watts are the watts that are dissipated directly through the heatsink and are outside the cabinet for flange mount, and inside the cabinet for other mounting types.

Watts Loss for 400/480V Drives

Drive Cat. No. ⁽¹⁾⁽²⁾	Normal Duty		External Watts ⁽³⁾	Internal Watts ⁽³⁾	Total Watts ⁽³⁾	Drive Cat. No. ⁽¹⁾⁽²⁾	Normal Duty		External Watts ⁽³⁾	Internal Watts ⁽³⁾	Total Watts ⁽³⁾
	kW	Continuous Output Amps					Hp	Continuous Output Amps			
400 Volt						480 Volt					
20x...C2P1	0.75	2.1	16 (16)	55 (56)	71 (72)	20x...D2P1	1.0	2.1	17 (21)	60 (61)	77 (82)
20x...C3P5	1.5	3.5	26 (33)	57 (60)	83 (93)	20x...D3P4	2.0	3.4	27 (39)	61 (64)	88 (103)
20x...C5P0	2.2	5	39 (44)	58 (62)	97 (106)	20x...D5P0	3.0	5	41 (54)	63 (67)	104 (121)
20x...C8P7	4.0	8.7	75 (79)	64 (80)	139 (159)	20x...D8P0	5.0	8	71 (91)	68 (82)	139 (173)
20x...C011	5.5	11.5	108 (107)	70 (85)	178 (192)	20x...D011	7.5	11	108 (118)	74 (88)	182 (206)
20x...C015	7.5	15.4	161 (166)	80 (80)	241 (246)	20x...D014	10	14	149 (152)	81 (81)	230 (233)
20x...C022	11	22	225	86	311	20x...D022	15	22	237	91	328
20x...C030	15	30	300	103	403	20x...D027	20	27	273	101	374
20x...C037	18.5	37	362	115	477	20x...D034	25	34	368	115	483
20x...C043	22	43	505	126	631	20x...D040	30	40	503	126	629
20x...C060	30	60	487	130	617	20x...D052	40	52	422	125	547
20x...C072	37	72	615	147	762	20x...D065	50	65	559	144	703
20x...C085	45	85	705	162	867	20x...D077	60	77	646	158	804
20x...C104	55	104	928	201	1129	20x...D096	75	96	855	189	1044
20x...C140	75	140	1239	319	1558	20x...D125	100	125	1109	299	1408
20x...C170	90	170	1381	300	1681	20x...D156	125	156	1299	294	1593
20x...C205	110	205	1893	381	2274	20x...D186	150	186	1718	358	2076
20x...C260	132	260	2449	502	2951	20x...D248	200	248	2384	492	2876
20x...C302	160	302	2566	461	3027	20x...D302	250	302	2704	491	3195
20x...C367	200	367	3322	586	3908	20x...D361	300	361	3409	606	4015
20x...C456	250	456	3922	743	4665	20x...D415	350	415	3604	683	4287
2xG...C460	250	460	4779	1090	5869	2xG...D430	350	430	4385	971	5356
20x...C477	270	477	4199	793	4992	20x...D477	400	477	4392	828	5220
2xG...C540	315	540	5316	1216	6532	2xG...D485	400	485	5091	1126	6217
2xG...C567	315	567	5652	1298	6950	2xG...D545	450	545	5649	1253	6902
2xG...C650	355	650	7011	1577	8588	2xG...D617	500	617	6942	1489	8431
2xG...C750	400	750	7577	1726	9303	2xG...D710	600	710	7631	1659	9290
2xG...C770	400	770	8086	1848	9934	2xG...D740	650	740	8133	1776	9909
2xG...C910	500	910	9155	2251	11406	2xG...D800	700	800	8710	2216	10926
2xG...C1K0	560	1040	9732	2357	12089	2xG...D960	800	960	9696	2391	12087
2xG...C1K1	630	1090	10745	2548	13293	2xG...D1K0	900	1045	10784	2589	13373
2xG...C1K2	710	1175	13778	2978	16756	2xG...D1K2	1000	1135	13378	2899	16277
2xG...C1K4	800	1465	13959	3013	16973	2xG...D1K3	1100	1365	14055	3025	17080
2xG...C1K5	850	1480	15441	3308	18749	2xG...D1K4	1250	1420	15573	3314	18887
2xG...C1K6	900	1590	15569	3717	19286	2xG...D1K5	1350	1525	15619	3779	19398
2xG...C2K1	1250	2150	22320	4790	27110	2xG...D2K0	1750	2070	22495	4802	27297

(1) Select the watts loss based on the catalog number.
 (2) Frames 8...10, enclosure codes B, J, L, P, and W.
 (3) Frame 1 watts loss in parentheses.

Watts Loss for 600/690V Drives

Drive Cat. No. (1)(2)	Normal Duty		External Watts	Internal Watts	Total Watts	Drive Cat. No. (1)(2)	Normal Duty		External Watts	Internal Watts	Total Watts
	kW	Continuous Output Amps					Hp	Continuous Output Amps			
690 Volt						600 Volt					
						20x...E1P7	1.0	1.7	23	15	38
						20x...E2P7	2.0	2.7	40	17	57
						20x...E3P9	3.0	3.9	51	18	69
						20x...E6P1	5.0	6.1	80	22	103
						20x...E9P0	7.5	9	122	29	150
						20x...E011	10	11	152	34	186
20x...F012	7.5	12	169	50	219	20x...E012	10	12	168	50	217
						20x...E017	15	17	249	54	302
						20x...F015	11	15	226	56	282
						20x...E022	20	22	329	74	403
						20x...F020	15	20	296	65	361
						20x...E024	20	24	326	71	397
						20x...F023	18.5	23	327	70	397
						20x...E028	25	28	375	79	453
						20x...F030	22	30	428	85	513
						20x...E033	30	33	439	90	528
						20x...F034	30	34	478	94	573
						20x...E042	40	42	555	112	667
						20x...F046	37	46	649	126	775
						20x...E053	50	53	711	144	855
						20x...F050	45	50	699	138	836
						20x...E077	75	77	935	166	1101
						20x...F061	55	61	760	130	891
						20x...E125	125	125	1678	318	1996
						20x...F082	75	82	1044	182	1226
						20x...E192	200	192	2801	433	3234
						20x...F098	90	98	1310	231	1541
						20x...E289	300	289	4437	762	5200
						20x...F119	110	119	1658	302	1961
						2xG...E355	350	355	5191	1131	6321
						20x...F142	132	142	2003	387	2391
						2xG...E435	450	435	5590	1163	6753
						20x...F171	160	171	2655	389	3044
						2xG...E510	500	510	6946	1396	8342
						20x...F212	200	212	3375	513	3889
						2xG...E630	700	630	9942	2225	12167
						20x...F263	250	263	4286	690	4976
						2xG...E825	900	825	11046	2342	13389
						2xG...F265	250	265	4314	996	5310
						2xG...E980	1000	980	13211	2709	15920
						2xG...F330	315	330	5160	1127	6287
						2xG...E1K4	1400	1430	19256	3966	23222
						2xG...F370	355	370	5803	1233	7036
						2xG...F415	400	415	5865	1211	7076
						2xG...F460	450	460	6638	1337	7975
						2xG...F500	500	500	7117	1417	8534
						2xG...F590	560	590	8941	2077	11019
						2xG...F650	630	650	9865	2220	12085
						2xG...F710	710	710	11136	2425	13561
						2xG...F765	750	765	11139	2368	13507
						2xG...F795	800	795	12663	2611	15275
						2xG...F960	900	860	13608	2767	16375
						2xG...F1K0	1000	1040	16147	3545	19692
						2xG...F1K4	1400	1400	19716	4034	23750

(1) Select the watts loss based on the catalog number.
 (2) Frames 8...10, enclosure codes B, L, P, and W.

Additional Watts Loss for Cabinet Options Bay

Drive Cat. No. ⁽¹⁾	Normal Duty		Cabinet Options Bay		Drive Cat. No. ⁽¹⁾	Normal Duty		Cabinet Options Bay	
	kW	Continuous Output Amps	Without Input or Output Line Reactor (Watts) ⁽²⁾	With Input or Output Line Reactor (Watts) ⁽²⁾		Hp	Continuous Output Amps	Without Input or Output Line Reactor (Watts) ⁽²⁾	With Input or Output Line Reactor (Watts) ⁽²⁾
400V					480V				
21G...C460	250	460	219	626	21G...D430	350	430	177	652
21G...C540	315	540	256	735	21G...D485	400	485	204	652
21G...C567	315	567	280	792	21G...D545	450	545	239	725
21G...C650	355	650	359	1123	21G...D617	500	617	295	983
21G...C750	400	750	404	1549	21G...D710	600	710	355	1410
21G...C770	400	770	441	1692	21G...D740	650	740	388	1542
21G...C910	500	910	327	2425	21G...D800	700	800	246	1867
21G...C1K0	560	1040	350	2651	21G...D960	800	960	364	2325
21G...C1K1	630	1090	384	2912	21G...D1K0	900	1045	353	2677
21G...C1K2	710	1175	446	3384	21G...D1K2	1000	1135	416	3158
21G...C1K4	800	1465	662	3520	21G...D1K3	1100	1365	574	3056
21G...C1K5	850	1480	675	3593	21G...D1K4	1250	1420	622	3307
690V					600V				
21G...F265	250	265	266	1090	21G...E295	300	295	233	838
21G...F330	315	330	304	1067	21G...E355	350	355	289	902
21G...F370	355	370	343	1288	21G...E395	400	395	328	759
21G...F415	400	415	379	1547	21G...E435	450	435	354	1208
21G...F460	450	460	240	1195	21G...E460	500	460	379	1327
21G...F500	500	500	251	1315	21G...E510	500	510	246	775
21G...F590	560	590	134	2617	21G...E595	600	595	136	1659
21G...F650	630	650	162	3175	21G...E630	700	630	153	1860
21G...F710	710	710	194	2362	21G...E760	800	760	222	2706
21G...F765	750	765	225	2742	21G...E825	900	825	269	3196
21G...F795	800	795	243	2961	21G...E900	950	900	320	2372
21G...F960	900	960	364	2699	21G...E980	1000	980	310	2744

(1) Select the watts loss based on the catalog number.

(2) For MCC power bus options, add the following watts: 1250 A power bus = 188 watts; 2000 A power bus = 261 watts; 3200 A power bus = 421 watts.

Derating Guidelines

If a catalog number is not shown, you can operate that drive without derating as long as the limits specified on [page 8](#) and [page 9](#) are followed.

Ambient Temperature/Load and Altitude/Load – 400V AC (Frames 1...7)

Cat. No. (see page 17)	400V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps		
20x...C8P7 (Frame 1)	–	–	4.0	8.7	2.2	5.0		
20x...C011 (Frame 1)	–	–	5.5	11.5	4.0	8.7		
20x...C015 (Frame 1)	–	–	7.5	15.4	5.5	11.5		
20x...C015 (Frame 2)	–	–	7.5	15.4	5.5	11.5		

Ambient Temperature/Load and Altitude/Load – 400V AC (Frames 1...7) (Continued)

Cat. No. (see page 17)	400V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps	— 2 kHz - - - 4 kHz - - - 8 kHz — 12 kHz - - - 2 kHz w/Cabinet Option (21G) — 4 kHz w/Cabinet Option (21G)	
20x...C022	—	—	11	22	7.5	15.4		
20x...C030	—	—	15	30	11	22		
20x...C037	—	—	18.5	37	15	30		
20x...C043	—	—	22	43	18.5	37		
20x...C060	—	—	30	60	22	43		

Ambient Temperature/Load and Altitude/Load – 400V AC (Frames 1...7) (Continued)

Cat. No. (see page 17)	400V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps		
20x...C072	–	–	37	72	30	60		
20x...C085	–	–	45	85	37	72		
20x...C104	–	–	55	104	45	85		
20x...C140	–	–	75	140	55	104		
20x...C170	–	–	90	170	75	140		

Ambient Temperature/Load and Altitude/Load – 400V AC (Frames 1...7) (Continued)

Cat. No. (see page 17)	400V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps		
20x...C205	–	–	110	205	90	170		
20x...C260	–	–	132	260	110	205		
20x...C302	–	–	160	302	132	260		
20x...C367	–	–	200	367	160	302		
20x...C456	–	–	250	456	200	367		

Ambient Temperature/Load and Altitude/Load – 400V AC (Frames 1...7) (Continued)

Cat. No. (see page 17)	400V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps		
20x...C477	–	–	270	477	200	367		

Ambient Temperature/Load and Altitude/Load – 400V AC (Frames 8...10)

Cat. No. (see page 17)	400V AC, Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps		
2xG...C460	315 (200)	540 (421)	250 (186)	460 (359)	200 (160)	385 (300)		
2xG...C540	315 (250)	585 (456)	315 (224)	540 (421)	250 (186)	456 (356)		
2xG...C567	355 (250)	612 (477)	315 (250)	567 (442)	250 (200)	472 (368)		

Ambient Temperature/Load and Altitude/Load – 400V AC (Frames 8...10) (Continued)

Cat. No. (see page 17)	400V AC, Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)			
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load		Altitude/Load	
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps				
2xG...C650	400 (315)	750 (585)	355 (300)	650 (507)	315 (224)	540 (421)				
2xG...C750	450 (315)	796 (621)	400 (315)	750 (585)	315 (250)	585 (456)				
2xG...C770	450 (355)	832 (649)	400 (355)	770 (601)	355 (300)	642 (501)				
2xG...C910	560 (425)	1040 (811)	500 (375)	910 (710)	400 (315)	750 (585)	See 2xG...C460		See 2xG...C460	
2xG...C1K0	630 (475)	1090 (850)	560 (425)	1040 (811)	500 (355)	880 (686)	See 2xG...C540		See 2xG...C540	
2xG...C1K1	710 (500)	1175 (917)	630 (475)	1090 (850)	500 (375)	910 (710)	See 2xG...C567		See 2xG...C567	
2xG...C1K2	800 (630)	1465 (1143)	710 (500)	1175 (917)	560 (425)	1040 (811)	See 2xG...C650		See 2xG...C650	
2xG...C1K4	850 (670)	1480 (1154)	800 (630)	1465 (1143)	630 (450)	1090 (850)	See 2xG...C750		See 2xG...C750	
2xG...C1K5	900 (750)	1600 (1248)	850 (670)	1480 (1154)	710 (500)	1175 (917)	See 2xG...C770		See 2xG...C770	
2xG...C1K6	1000 (710)	1715 (1338)	900 (750)	1590 (1240)	710 (600)	1325 (1034)	See 2xG...C567		See 2xG...C567	
2xG...C2K1	1400 (1000)	2330 (1817)	1250 (950)	2150 (1677)	1000 (750)	1800 (1404)	See 2xG...C770		See 2xG...C770	

Ambient Temperature/Load and Altitude/Load – 480V AC (Frames 1...7)

Cat. No. (see page 17)	480V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	— 2 kHz - - - 4 kHz - - - 8 kHz — 12 kHz — 2 kHz w/Cabinet Option (21G) — 4 kHz w/Cabinet Option (21G)	
20x...D8P0 (Frame 1)	—	—	5.0	8.0	3.0	5.0		
20x...D011 (Frame 1)	—	—	7.5	11	5.0	8.0		
20x...D014 (Frame 1)	—	—	10	14	7.5	11		
20x...D014 (Frame 2)	—	—	10	14	7.5	11		
20x...D022	—	—	15	22	10	14		

Ambient Temperature/Load and Altitude/Load – 480V AC (Frames 1...7) (Continued)

Cat. No. (see page 17)	480V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	— 2 kHz - - - 4 kHz - - - 8 kHz — 12 kHz — 2 kHz w/Cabinet Option (21G) — 4 kHz w/Cabinet Option (21G)	
20x...D027	—	—	20	27	15	22		
20x...D034	—	—	25	34	20	27		
20x...D040	—	—	30	40	25	34		
20x...D052	—	—	40	52	30	40		
20x...D065	—	—	50	65	40	52		

Ambient Temperature/Load and Altitude/Load – 480V AC (Frames 1...7) (Continued)

Cat. No. (see page 17)	480V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	— 2 kHz - - - 4 kHz - - - 8 kHz — 12 kHz — 2 kHz w/Cabinet Option (21G) — 4 kHz w/Cabinet Option (21G)	
20x...D077	—	—	60	77	50	65		
20x...D096	—	—	75	96	60	77		
20x...D125	—	—	100	125	75	96		
20x...D156	—	—	125	156	100	125		
20x...D186	—	—	150	186	125	156		

Ambient Temperature/Load and Altitude/Load – 480V AC (Frames 1...7) (Continued)

Cat. No. (see page 17)	480V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 1...5) and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	— 2 kHz - - - 4 kHz - - - 8 kHz — 12 kHz — 2 kHz w/Cabinet Option (21G) — 4 kHz w/Cabinet Option (21G)	
20x...D248	—	—	200	248	150	186		
20x...D302	—	—	250	302	200	248		
20x...D361	—	—	300	361	250	302		
20x...D415	—	—	350	415	300	361		
20x...D477	—	—	400	477	300	361		

Ambient Temperature/Load and Altitude/Load – 480V AC (Frames 8...10)

Cat. No. (see page 17)	480V AC Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	— 2 kHz - - - 4 kHz - - - 8 kHz — 12 kHz - - - 2 kHz w/Cabinet Option (21G) - - - 4 kHz w/Cabinet Option (21G)	
2xG...D430	400 (300)	485 (378)	350 (250)	430 (335)	300 (250)	370 (289)		
2xG...D485	450 (350)	545 (425)	400 (300)	485 (378)	350 (250)	414 (323)		
2xG...D545	500 (400)	590 (460)	450 (350)	545 (425)	350 (300)	454 (354)		
2xG...D617	600 (450)	710 (554)	500 (400)	617 (481)	400 (300)	485 (378)		
2xG...D710	650 (500)	765 (597)	600 (450)	710 (554)	450 (350)	545 (425)		

Ambient Temperature/Load and Altitude/Load – 480V AC (Frames 8...10) (Continued)

Cat. No. (see page 17)	480V AC Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)							
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load						Altitude/Load	
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps								
2xG...D740	700 (500)	800 (624)	650 (450)	740 (577)	500 (400)	617 (481)								
2xG...D800	800 (650)	960 (749)	700 (500)	800 (624)	600 (450)	710 (554)	See 2xG...D430				See 2xG...D430			
2xG...D960	900 (750)	1045 (815)	800 (650)	960 (749)	700 (500)	795 (620)	See 2xG...D485				See 2xG...D485			
2xG...D1K0	1000 (850)	1135 (885)	900 (700)	1045 (815)	750 (500)	800 (624)	See 2xG...D545				See 2xG...D545			
2xG...D1K2	1100 (900)	1365 (1065)	1000 (800)	1135 (885)	800 (600)	960 (749)	See 2xG...D617				See 2xG...D617			
2xG...D1K3	1250 (950)	1420 (1108)	1100 (900)	1365 (1065)	900 (700)	1045 (815)	See 2xG...D710				See 2xG...D710			
2xG...D1K4	1350 (1000)	1540 (1201)	1250 (950)	1420 (1108)	1000 (750)	1135 (885)	See 2xG...D740				See 2xG...D740			
2xG...D1K5	1500 (1100)	1655 (1291)	1350 (1000)	1525 (1190)	1100 (900)	1270 (991)	See 2xG...D545				See 2xG...D545			
2xG...D2K0	2000 (1650)	2240 (1747)	1750 (1350)	2070 (1615)	1650 (1100)	1730 (1349)	See 2xG...D740				See 2xG...D740			

Ambient Temperature/Load and Altitude/Load – 600V AC (Frames 3...7)

Cat. No. (see page 17)	600V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 3...5), and IP00 NEMA/UL Type Open (Frames 6 and 7)							
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load						Altitude/Load	
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps								
20x...E017	–	–	15	17	10	11								

Ambient Temperature/Load and Altitude/Load – 600V AC (Frames 3...7) (Continued)

Cat. No. (see page 17)	600V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 3...5), and IPO0 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	Altitude/Load	
20x...E022	–	–	20	22	15	17		
20x...E027	–	–	25	27	20	22		
20x...E032	–	–	30	32	25	27		
20x...E041	–	–	40	41	30	32		
20x...E052	–	–	50	52	40	41		

Ambient Temperature/Load and Altitude/Load – 600V AC (Frames 3...7) (Continued)

Cat. No. (see page 17)	600V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 3...5), and IPO0 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	Altitude/Load	
20x...E099	–	–	100	99	75	77		
20x...E125	–	–	125	125	100	99		
20x...E144	–	–	150	144	125	125		
20x...E192	–	–	200	192	150	144		
20x...E242	–	–	250	242	200	192		

Ambient Temperature/Load and Altitude/Load – 600V AC (Frames 3...7) (Continued)

Cat. No. (see page 17)	600V AC Power Rating						Derating for IP20 NEMA/UL Type Open (Frames 3...5), and IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	Altitude/Load	
20x...E289	–	–	300	289	250	242		

Ambient Temperature/Load and Altitude/Load – 600V AC (Frames 8...10)

Cat. No. (see page 17)	600V AC Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps	Altitude/Load	
2xG...E295	350 (250)	355 (277)	300 (200)	295 (230)	250 (200)	272 (212)		
2xG...E355	400 (300)	395 (308)	350 (250)	355 (277)	300 (200)	295 (230)		
2xG...E395	450 (300)	435 (339)	400 (300)	395 (308)	350 (250)	329 (257)		

Ambient Temperature/Load and Altitude/Load – 600V AC (Frames 8...10) (Continued)

Cat. No. (see page 17)	600V AC Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	Hp	Cont. Amps	Hp	Cont. Amps	Hp	Cont. Amps		
2xG...E435	500 (350)	460 (359)	450 (300)	435 (339)	350 (250)	355 (277)		
2xG...E460	500 (400)	510 (398)	500 (350)	460 (359)	400 (300)	395 (308)		
2xG...E510	550 (400)	545 (425)	500 (400)	510 (398)	450 (300)	425 (332)		
2xG...E595	700 (500)	690 (538)	600 (450)	595 (464)	500 (400)	510 (398)	See 2xG...E295	See 2xG...E295
2xG...E630	800 (550)	760 (593)	700 (500)	630 (491)	600 (450)	595 (464)	See 2xG...E395	See 2xG...E355
2xG...E760	900 (650)	835 (651)	800 (550)	760 (593)	700 (500)	630 (491)	See 2xG...E395	See 2xG...E395
2xG...E825	950 (700)	900 (702)	900 (600)	825 (644)	750 (550)	700 (546)	See 2xG...E435	See 2xG...E435
2xG...E900	1000 (750)	980 (764)	950 (700)	900 (702)	800 (600)	760 (593)	See 2xG...E460	See 2xG...E460
2xG...E980	1100 (800)	1045 (815)	1000 (750)	980 (764)	900 (625)	815 (636)	See 2xG...E510	See 2xG...E510
2xG...E1K1	1200 (950)	1220 (952)	1100 (850)	1110 (866)	1000 (700)	920 (718)	See 2xG...E395	See 2xG...E395
2xG...E1K4	1500 (1100)	1530 (1193)	1400 (1000)	1430 (1115)	1250 (900)	1190 (928)	See 2xG...E510	See 2xG...E510

Ambient Temperature/Load and Altitude/Load – 690V AC (Frames 6 and 7)

Cat. No. (see page 17)	690V AC Power Rating						Derating for IP00 NEMA/UL Type Open (Frames 6 and 7)	
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps	2 kHz (solid red), 4 kHz (dashed blue), 8 kHz (dotted orange), 12 kHz (solid black) 2 kHz w/Cabinet Option (21G) (dashed purple), 4 kHz w/Cabinet Option (21G) (dotted green)	
2xG...F030	–	–	22	30	18.5	23		
2xG...F034	–	–	30	34	22	30		
2xG...F046	–	–	37	46	30	34		
2xG...F050	–	–	45	50	37	46		
2xG...F061	–	–	55	61	45	50		

Ambient Temperature/Load and Altitude/Load – 690V AC (Frames 6 and 7) (Continued)

Cat. No. (see page 17)	690V AC Power Rating						Derating for IP00 NEMA/UL Type Open (Frames 6 and 7)					
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load				Altitude/Load	
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps	— 2 kHz — 4 kHz - - - 8 kHz — 12 kHz				— 2 kHz — 4 kHz - - - 8 kHz — 12 kHz - - - 2 kHz w/Cabinet Option (21G) — 4 kHz w/Cabinet Option (21G)	
2xG...F082	—	—	75	82	55	61						
2xG...F098	—	—	90	98	75	82						
2xG...F119	—	—	110	119	90	98						
2xG...F142	—	—	132	142	110	119						
2xG...F171	—	—	160	171	132	142						

Ambient Temperature/Load and Altitude/Load – 690V AC (Frames 6 and 7) (Continued)

Cat. No. (see page 17)	690V AC Power Rating						Derating for IP00 NEMA/UL Type Open (Frames 6 and 7)					
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load				Altitude/Load	
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps						
2xG...F212	–	–	200	212	160	171						
2xG...F263	–	–	250	263	200	212						

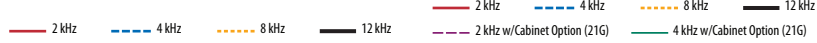
Ambient Temperature/Load and Altitude/Load – 690V AC (Frames 8...10)

Cat. No. (see page 17)	690V AC Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)					
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load				Altitude/Load	
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps						
2xG...F265	315 (250)	330 (257)	250 (200)	265 (207)	200 (160)	215 (168)						
2xG...F330	355 (250)	370 (289)	315 (224)	330 (257)	250 (200)	265 (207)						

Ambient Temperature/Load and Altitude/Load – 690V AC (Frames 8...10) (Continued)

Cat. No. (see page 17)	690V AC Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)			
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load		Altitude/Load	
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps	— 2 kHz — 4 kHz — 8 kHz — 12 kHz	— 2 kHz w/Cabinet Option (21G) — 4 kHz w/Cabinet Option (21G)		
2xG...F370	400 (315)	410 (320)	355 (250)	370 (289)	300 (224)	308 (240)				
2xG...F415	450 (355)	460 (359)	400 (315)	415 (324)	355 (250)	370 (289)				
2xG...F460	500 (375)	500 (390)	450 (350)	460 (359)	375 (300)	375 (293)				
2xG...F500	530 (400)	530 (413)	500 (400)	500 (390)	400 (315)	413 (322)				
2xG...F590	630 (500)	650 (507)	560 (450)	590 (460)	450 (355)	460 (359)	See 2xG...F265	See 2xG...F265		
2xG...F650	710 (530)	710 (554)	630 (500)	650 (507)	500 (375)	500 (390)	See 2xG...F330	See 2xG...F330		
2xG...F710	800 (560)	790 (616)	710 (530)	710 (554)	560 (450)	590 (460)	See 2xG...F370	See 2xG...F370		
2xG...F765	850 (630)	860 (671)	750 (600)	765 (597)	630 (500)	650 (507)	See 2xG...F415	See 2xG...F415		
2xG...F795	900 (710)	960 (749)	800 (630)	795 (620)	710 (600)	750 (585)	See 2xG...F460	See 2xG...F460		

Ambient Temperature/Load and Altitude/Load – 690V AC (Frames 8...10) (Continued)

Cat. No. (see page 17)	690V AC Power Rating at 40 °C (104 °F) (Power Rating at 50 °C [122 °F])						Derating for IP20 NEMA/UL Type 1 (Frames 8...10), IP00 NEMA/UL Type 0 (Frames 8...10), and IP54 NEMA/UL Type 12 (Frames 8...10)							
	Light Duty		Normal Duty		Heavy Duty		Ambient Temperature/Load						Altitude/Load	
	kW	Cont. Amps	kW	Cont. Amps	kW	Cont. Amps								
2xG...F960	1000 (800)	1020 (796)	900 (750)	960 (749)	800 (600)	795 (620)	See 2xG...F500						See 2xG...F500	
2xG...F1K0	1100 (900)	1150 (897)	1000 (750)	1040 (811)	900 (670)	865 (675)	See 2xG...F370						See 2xG...F370	
2xG...F1K4	1500 (1120)	1485 (1158)	1400 (1000)	1400 (1092)	1120 (900)	1160 (905)	See 2xG...F500						See 2xG...F500	

Minimum Dynamic Brake Resistance

The tables in this section show the minimum dynamic brake resistance when you use the internal dynamic braking transistor.

Brake Resistance for 400/480V Drives

Frame	480V				400V			
	ND Hp	Catalog Code	Min Resistance	Max DB Current	ND kW	Catalog Code	Min Resistance	Max DB Current
1	1.0	2P1	79.0	10	0.75	C2P1	79.0	10
	2.0	D3P4	79.0	10	1.5	C3P5	79.0	10
	3.0	D5P0	79.0	10	2.2	C5P0	79.0	10
	5.0	D8P0	52.7	15	4	C8P7	52.7	15
	7.5	D011	31.6	25	5.5	C011	31.6	25
	10	D014	31.6	25	7.5	C015	31.6	25
2	1.0	D2P1	31.6	25	0.75	C2P1	31.6	25
	2.0	D3P4	31.6	25	1.5	C3P5	31.6	25
	3.0	D5P0	31.6	25	2.2	C5P0	31.6	25
	5.0	D8P0	31.6	25	4	C8P0	31.6	25
	7.5	D011	31.6	25	5.5	C011	31.6	25
	10	D014	31.6	25	7.5	C015	31.6	25
	15	D022	22.6	34.9	11	C022	22.6	34.9
3	20	D027	31.6	25	15	C030	31.6	25
	25	D034	31.6	25	18.5	C037	31.6	25
	30	D040	16.6	47.6	22	C043	16.6	47.6
4	40	D052	15.8	50	30	C060	15.8	50
	50	D065	15.8	50	37	C072	15.8	50
5	50 ⁽¹⁾	D065 ⁽¹⁾	7.9	100	37 ⁽¹⁾	C075 ⁽¹⁾	7.9	100
	60	D077	7.9	100	45	C085	7.9	100
	75	D096	7.9	100	55	C104	7.9	100

Brake Resistance for 400/480V Drives (Continued)

Frame	480V				400V			
	ND Hp	Catalog Code	Min Resistance	Max DB Current	ND kW	Catalog Code	Min Resistance	Max DB Current
6	75 ⁽¹⁾	D096 ⁽¹⁾	3.3	239.4	55 ⁽¹⁾	C104 ⁽¹⁾	3.3	239.4
	100	D125	3.3	239.4	75	C140	3.3	239.4
	125	D156	3.3	239.4	90	C170	3.3	239.4
	150	D186	3.3	239.4	110	C205	3.3	239.4
	200	D248	3.3	239.4	132	C260	3.3	239.4
7	200 ⁽¹⁾	D248 ⁽¹⁾	2.4	329	132 ⁽¹⁾	C260 ⁽¹⁾	2.4	329
	250	D302	2.4	329	160	C302	2.4	329
	300	D361	2.4	329	200	C367	2.4	329
	350	D415	1.65	478.8	250	C456	1.65	478.8
	400	D477	1.65	478.8	270	C477	1.65	147.8

(1) IP54, NEMA/UL Type 12 (enclosure code G).

Brake Resistance for 600V Drives (Frames 3...5)

Frame	600V			
	ND Hp	Catalog Code	Min Resistance	Max DB Current
3	1.0	E1P7	92	11
	2.0	E2P7	92	11
	3.0	E3P9	92	11
	5.0	E6P1	32	30
	7.5	E9P0	32	30
	10	E011	32	30
	15	E017	32	30
	20	E022	32	30
4	25	E027	32	30
	30	E032	32	30
5	40	E041	13.5	71
	50	E052	13.5	71

Brake Resistance for 600/690V Drives (Frames 6 and 7)

Frame	600V				690V			
	ND Hp	Catalog Code	Min Resistance	Max DB Current	ND kW	Catalog Code	Min Resistance	Max DB Current
6	10	E012	14.4	76.4	7.5	F012	14.4	76.4
	15	E018	14.4	76.4	11	F015	14.4	76.4
	20	E023	14.4	76.4	15	F020	14.4	76.4
	20	E024	14.4	76.4	18.5	F023	14.4	76.4
	25	E028	14.4	76.4	22	F030	14.4	76.4
	30	E033	14.4	76.4	30	F034	14.4	76.4
	40	E042	14.4	76.4	37	F046	14.4	76.4
	50	E053	14.4	76.4	45	F050	14.4	76.4
	60	E063	5.5	200	55	F061	5.5	200
	75	E077	5.5	200	75	F082	5.5	200
	100	E099	5.5	200	90	F098	5.5	200
	125	E125	5.5	200	110	F119	5.5	200
	150	E144	5.5	200	132	F142	5.5	200
	7	200	E192	3.8	289	160	F171	3.8
250		E242	3.8	289	200	F212	3.8	289
300		E289	3.2	344	250	F263	3.2	344

Fuse and Circuit Breaker Ratings

The tables in this section provide recommended AC line input fuse and circuit breaker information. See [Fusing on page 41](#) and [Circuit Breakers on page 41](#) for UL and IEC requirements. The size recommendations are based on 40 °C (104 °F) and the U.S. NEC. Other country, state, or local codes can require different ratings. DC link fuse recommendations for DC input drives are also provided. In addition, Frame 8 and larger drives include AC line fuses (with blown fuse indicators) to provide drive short circuit protection.

Input Device Requirements

Frames	Enclosure Catalog Code	Enclosure Type	Installation Type	UL Certification Required	UL Certification Not Required
1	R	IP20 NEMA/UL Open Type	Installed in a ventilated or non-ventilated cabinet.	All devices that are listed on pages 42 and 45 are acceptable. When installed in a ventilated cabinet, time delay fuses, circuit breakers, and 140M combination motor controllers must meet or exceed the listed minimum enclosure volume on pages 42 and 45 .	All devices that are listed on pages 42 through 53 are acceptable.
			Installed outside of cabinet by using NEMA Type 1 kit or in a ventilated cabinet.	Only non-time delay fuses that are listed on pages 42 and 45 , excluding maximum value, are acceptable.	
2...5	N	IP20 NEMA/UL Open Type	Installed in a ventilated or non-ventilated cabinet. Heat sink is inside or outside of cabinet.	All devices that are listed on pages 42 , 45 , and 48 are acceptable. When installed in a ventilated cabinet, time delay fuses, circuit breakers, and 140M combination motor controllers must meet or exceed the listed minimum enclosure volume on pages 42 , 45 , and 48 .	
	F	Flange			
	N	IP20 NEMA/UL Open Type	Installed outside of cabinet by using NEMA Type 1 kit or in a ventilated cabinet.	400V AC/540V DC or 480V AC/650V DC drives. Only non-time delay fuses that are listed on pages 42 and 45 , excluding maximum value, are acceptable. 600V AC/810V DC drives. Only non-time delay fuses that are listed on page 48 are acceptable, with maximum value of 40 A (Frame 3), 60 A (Frame 4), and 100 A (Frame 5).	
	F	Flange			
6 and 7	N	IP00 NEMA/UL Open Type	Installed in any cabinet. Heat sink is inside or outside of cabinet.	400V AC/540V DC or 480V AC/650V DC drives. All devices that are listed on pages 42 and 45 are acceptable. 600V AC/810V DC drives. Only time delay and non-time delay fuses that are listed on page 48 are acceptable.	
			Installed outside of cabinet by using NEMA Type 1 kit.		
	G	IP54 NEMA/UL Type 12	Installed inside or outside of any cabinet.	All devices that are listed on pages 42 , 45 , and 48 are acceptable.	
8...10	B, L, P, W	IP20 NEMA/UL Type 1	Installed inside of any cabinet.	All devices that are listed on pages 43 , 47 , and 50 are acceptable.	
	J, K, Y	IP54 NEMA 12	Installed inside or outside of any cabinet.	All devices that are listed on pages 43 , 47 , and 50 are acceptable.	

IMPORTANT For maximum protection of the drive and its internal components, we recommend the use of semiconductor fuses to other methods of circuit protection. Semiconductor fuses reduce the risk of drive damage from power quality events, and improves machine and process utilization.

Fusing

The recommended fuse types are listed here. If available current ratings do not match the ratings that are listed in these tables, choose the next higher fuse rating.

- IEC – BS88 (British Standard) Parts 1 & 2, EN60269-1, Parts 1 & 2⁽¹⁾, type gG or equivalent must be used.
- UL – UL Class CC, T, RK1, J, or L must be used.

Circuit Breakers

The non-fuse listings in the following tables include inverse time circuit breakers, instantaneous trip circuit breakers (motor circuit protectors), and 140M self-protected combination motor controllers. If one of these methods are chosen for protection, the following requirements apply:

- IEC – Both types of circuit breakers and 140M self-protected combination motor controllers are acceptable for IEC installations.
- UL - Only inverse time circuit breakers and the specified 140M self-protected combination motor controllers are acceptable for UL installations.

(1) Typical designations include, but is not limited to the following; Parts 1 & 2: AC, AD, BC, BD, CD, DD, ED, EFS, EF, FF, FG, GF, GG, GH.

400 Volt AC and 540 Volt DC Input Protection Devices – Wall Mount Frames 1...7

Applied Rating ⁽¹⁾	Frame ⁽²⁾	Drive Sized For Normal Duty				Drive Sized For Heavy Duty				Input Quantities				AC Input Protection Devices						DC Input Protection ⁽¹⁴⁾	
		Output Overload Amps		Cat. No.	Output Overload Amps	3 sec	Output Overload Amps		Cat. No.	3 sec	Continuous AC Input		Circuit Breaker Max Size ⁽⁶⁾	Circuit Breaker, Dual-element Time-delay Fuse	Motor Circuit Protector ⁽⁸⁾	140M Type E Combination Motor Controller with Adjustable Current Range ⁽⁹⁾⁽¹⁰⁾		Continuous DC Input	Non-Time Delay Fuse		
		1 min	3 sec				1 min	3 sec			kVA	Amps				Min ⁽⁴⁾	Max ⁽⁵⁾			Min ⁽⁴⁾	Max ⁽⁵⁾
400 Volt AC Input																					
0.75 kW	1	2.1	20x...C2P1	2.3	3.2	20x...C2P1	2.3	3.2	1.2	1.7	2	3	15	3840	3	M-xxx-B25 ⁽¹¹⁾	7269	2.1	JKS-6		
1.5 kW	1	3.5	20x...C3P5	3.9	5.3	20x...C3P5	3.9	5.3	1.9	2.8	6	6	15	3840	7	M-xxx-B40 ⁽¹¹⁾	7269	3.7	JKS-8		
2.2 kW	1	5	20x...C5P0	5.5	7.5	20x...C5P0	5.5	7.5	3.1	4.5	6	6	20	3840	7	M-xxx-B63 ⁽¹¹⁾	7269	5.3	JKS-10		
4.0 kW	1	8.7	20x...C8P7	9.6	13.1	20x...C8P7	9.6	13.1	5.4	7.8	10	15	30	3840	15	M-xxx-C10 ⁽¹¹⁾	7269	9.3	HSJ15		
5.5 kW	1	11.5	20x...C011	12.7	17.3	20x...C011	13.1	17.3	7.4	10.7	15	20	45	3840	15	M-xxx-C16 ⁽¹¹⁾	7269	12.6	HSJ20		
7.5 kW	1	15.4	20x...C015	16.9	23.1	20x...C022 ⁽³⁾	17.3	23.1	10.1	14.6	20	25	60	3840	20	M-xxx-C20 ⁽¹¹⁾	7269	17.0	HSJ25		
0.75 kW	2	2.1	20x...C2P1	3.1	3.7	20x...C2P1	3.1	3.7	1.2	1.7	3	6	15	3840	3	M-xxx-B25 ⁽¹¹⁾	9086	2.1	JKS-6		
1.5 kW	2	3.5	20x...C3P5	5.2	6.3	20x...C3P5	5.2	6.3	1.9	2.8	6	7	15	3840	7	M-xxx-B40 ⁽¹¹⁾	9086	3.7	JKS-8		
2.2 kW	2	5	20x...C5P0	7.5	9.0	20x...C5P0	7.5	9.0	3.1	4.5	6	10	20	3840	7	M-xxx-B63 ⁽¹¹⁾	9086	5.3	JKS-10		
4.0 kW	2	8.7	20x...C8P7	13.0	15.6	20x...C8P7	13.0	15.6	5.4	7.8	10	17.5	30	3840	15	M-xxx-C10 ⁽¹¹⁾	9086	9.3	HSJ15		
5.5 kW	2	11.5	20x...C011	17.2	20.7	20x...C011	17.2	20.7	7.4	10.7	15	25	45	3840	15	M-xxx-C16 ⁽¹¹⁾	9086	12.6	HSJ20		
7.5 kW	2	15.4	20x...C015	16.9	23.1	20x...C022	24.2	33.0	10.1	14.6	20	30	60	3840	20	M-xxx-C20 ⁽¹¹⁾	9086	17.0	HSJ25		
11 kW	2	22	20x...C022	24.2	33.0	20x...C030 ⁽³⁾	33.0	45.0	14.6	21.1	30	45	80	3840	30	M-xxx-C25 ⁽¹²⁾	9086	24.6	HSJ40		
15 kW	3	30	20x...C030	33.0	45.0	20x...C037	45.0	55.5	19.9	28.7	40	60	100	4800	50	M-F8E-C32	9086	33.6	HSJ50		
18.5 kW	3	37	20x...C037	40.7	55.5	20x...C043	55.5	66.6	24.5	35.4	45	80	110	4800	50	M-F8E-C45	9086	41.4	HSJ70		
22 kW	3	43	20x...C043	47.3	64.5	20x...C060 ⁽³⁾	66.0	90.0	28.5	41.2	55	90	120	4800	60			48.1	HSJ90		
30 kW	4	60	20x...C060	66.0	90.0	20x...C072	90.0	108.0	39.8	57.4	75	125	180	4800	100			67.1	HSJ100		
37 kW	4	72	20x...C072	79.2	108.0	20x...C085 ⁽³⁾	108.0	129.6	48.9	70.5	90	150	200	4800	100			82.4	HSJ125		
45 kW	5	85	20x...C085	93.5	127.5	20x...C104	127.5	156.0	57.7	83.3	110	175	250	7200	150			97.3	HSJ150		
55 kW	5	104	20x...C104	114.4	156.0	20x...C140 ⁽³⁾	156.0	210.0	71.3	102.9	130	225	300	7200	150			120.2	HSJ175		
75 kW	6	140	20x...C140	154.0	210.0	20x...C170	210.0	255.0	95.0	137.2	175	300	400		250			160.3	HSJ250		
90 kW	6	170	20x...C170	187.0	255.0	20x...C205	255.0	307.5	115.4	166.5	225	375	500		250			194.6	HSJ350		
110 kW	6	205	20x...C205	225.5	307.5	20x...C260	307.5	390.0	139.1	200.8	275	450	600		400			234.7	HSJ350		
132 kW	6	260	20x...C260	286.0	390.0	20x...C302 ⁽³⁾	390.0	468.0	176.5	254.7	325	575	700		400			297.7	HSJ400		
160 kW	7	302	20x...C302	332.2	453.0	20x...C367	453.0	550.5	205.0	295.9	400	675	900		600			345.7	Busman 170M608		

400 Volt AC and 540 Volt DC Input Protection Devices – Wall Mount Frames 1...7 (Continued)

Applied Rating ⁽¹⁾	Drive Sized For Normal Duty				Drive Sized For Heavy Duty				AC Input Protection Devices				DC Input Protection ⁽¹⁴⁾				
	Output Overload Amps		Cat. No.	Output Overload Amps	3 sec	1 min	3 sec	1 min	Dual-element Time-delay Fuse	Non Time-delay Fuse	Circuit Breaker Max Size ⁽⁶⁾	Circuit Breaker, Dual-element Time-delay Fuse		Motor Circuit Protector ⁽⁸⁾	140M Type E Combination Motor Controller with Adjustable Current Range ^{(9),(10)}		
	Cat. No.	Cont. Output AC Input														Continuous AC Input	Amps
200 kW	7	367	20x...C367	403.7	550.5	20x...C456	550.5	684.0	249.1	359.5	475	800	1100	1000	600		540 Volt DC Input
250 kW	7	456	20x...C456	501.6	684.0		309.5	446.7	600	1000	600	1300	1300	1800	600		Bussman 170M6613
270 kW	7	477	20x...C477	524	715.5		323.8	467.3	600	1000	600	1400	1400	1400			Bussman 170M6613

- (1) Applied rating refers to the motor that is connected to the drive. For example, a C022 drive can be used in Normal Duty mode on an 11 kW motor, or in Heavy Duty mode on a 7.5 kW motor. A C015 drive can be used in Heavy Duty mode on a 5.5 kW motor with the same ratings as a C011. The drive can be programmed for either mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 306 (Duty Rating).
- (2) Only enclosure codes F, N, and R. See Drive Rating Cross-reference in PowerFlex 750-Series AC Drives Installation Instructions, publication [250-IN001](#), for frame sizes of other enclosure types.
- (3) This drive is the next larger frame size.
- (4) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.
- (5) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
- (6) Circuit breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
- (7) When using a circuit breaker or time-delay fuse with a drive that is installed in a ventilated enclosure, the enclosure volume must be greater than or equal to the minimum volume specified in this column. Application-specific thermal considerations can require a larger enclosure.
- (8) Recommended motor circuit protector - instantaneous trip circuit breaker. The trip setting must be set to the input current of the drive and must be sized for the continuous current of the system.
- (9) Bulletin 140M with adjustable current range must have the current trip set to the minimum range so that the device does not trip.
- (10) manual self-protected (Type E) combination motor controller, UL Listed for 480V/277V and 600V/347V AC Input. Not UL Listed for use on 480V or 600V Delta/Delta, corner ground, or high-resistance ground systems.
- (11) Bulletin 140M must be Frame C (CE), Frame D (DBF), or Frame F (FBE).
- (12) Bulletin 140M must be Frame D (DBF) or Frame F (FBE).
- (13) When using a manual self-protected (Type E) combination motor controller, the drive must be installed in a ventilated or non-ventilated enclosure with the minimum volume that is specified in this column. Application-specific thermal considerations can require a larger enclosure.
- (14) See Fuse Certification and Test Data in PowerFlex AC Drives in Common Bus (Configurations Application Guidelines), publication [DRIVES-AL002](#), for fuse self-certification and test data for Bussmann 170M and JIS fuses recommended for the DC bus fusing.

400 Volt AC and 540 Volt DC Input Protection Devices – Floor Mount Frames 8...10

Applied Rating ⁽¹⁾	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		AC Input Fuse Size (170M) ⁽²⁾	Amps	Continuous AC Input	AC Input Integral Semiconductor Fuse Size (170M) ⁽²⁾	Amps	DC Bay to Bay Integral Semiconductor Fuse Size (170M)	AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 2 IG Drives with Options)				DC Input Integral Semiconductor Fuse Size (170M) ⁽⁸⁾	Amps
				1 min	3 sec							Dual-element Time-delay Fuse		Circuit Breaker Max Size ⁽⁶⁾	Motor Circuit Protector ⁽⁷⁾		
												1/Phase Min ⁽⁴⁾	2/Phase Min ⁽⁴⁾				
200 kW	8	385	Heavy	206...C460	578	693	380	1100	–	500	–	850	–	1100	1100	500	540V DC Input
250 kW	8	460	Normal	206...C460	506	693	455	1100	–	600	–	1000	600	1300	1300	600	1600
		456	Heavy	206...C540	684	821	450	1100	–	600	–	1000	600	1300	1300	600	1600
		472	Heavy	206...C567	708	851	466	1100	–	600	–	1000	600	1400	1400	600	1600

400 Volt AC and 540 Volt DC Input Protection Devices – Floor Mount Frames 8...10 (Continued)

Applied Rating ⁽¹⁾	Frame	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		AC Input Integral Semiconductor Fuse Size (170M) ⁽²⁾		DC Bay to Bay Integral Semiconductor Fuse Size (170M)		AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)						DC Input Integral Semiconductor Fuse Size (170M) ⁽⁸⁾		
					1 min	3 sec	Amps	Amps	Amps	Dual-element Time-delay Fuse			Non Time-delay Fuse			Circuit Breaker Max Size ⁽⁶⁾	Motor Circuit Protector ⁽⁷⁾	Continuous DC Input	Amps
										1/Phase Min ⁽⁴⁾	2/Phase Min ⁽⁴⁾	Max ⁽⁵⁾	1/Phase Min ⁽⁴⁾	2/Phase Min ⁽⁴⁾	Max ⁽⁵⁾				
400V AC Input																			
315 kW	8	540	Light	206...C460	594	—	534	1100	—	700	350	1200	700	350	1600	1600	700	1600	
		540	Normal	206...C540	594	821	533	1100	—	700	350	1200	700	350	1600	1600	700	1600	
		540	Heavy	206...C650	810	975	533	1100	—	700	—	1200	700	—	1600	1600	700	1600	
315 kW	8	585	Light	206...C540	644	—	578	1100	—	750	375	1300	750	375	1700	1700	800	1600	
		567	Normal	206...C567	624	851	560	1100	—	750	375	1200	750	375	1700	1700	700	1600	
		585	Heavy	206...C750	878	1125	577	1100	—	750	375	1300	750	375	1700	1700	800	1600	
355 kW	8	612	Light	206...C567	673	—	604	1100	—	800	400	1300	800	400	1800	1800	800	1600	
		650	Normal	206...C650	715	975	640	1100	—	850	425	1400	850	425	1900	1900	800	1600	
		642	Heavy	206...C770	963	1155	634	1100	—	800	400	1400	800	400	1900	1900	800	1600	
400 kW	8	750	Light	206...C650	825	—	739	1100	—	1000	500	1600	1000	500	2200	2200	1000	1600	
		750	Normal	206...C750	825	1125	739	1100	—	1000	500	1600	1000	500	2200	2200	1000	1600	
		770	Normal	206...C770	847	1155	758	1100	—	1000	500	1700	1000	500	2300	2300	1000	1600	
450 kW	8	796	Light	206...C750	876	—	784	1100	—	1000	500	1700	1000	500	2300	2300	1000	1600	
		832	Light	206...C770	915	—	819	1100	—	1100	550	1800	1100	550	2400	2400	1200	1600	
400 kW	9	750	Heavy	206...C910	1125	1365	739	1100	1400 ⁽³⁾	900	450	1700	900	450	2200	2200	900	1600 ⁽³⁾	
500 kW	9	880	Heavy	206...C1K0	1320	1584	867	1100	1400 ⁽³⁾	1100	550	2000	1100	550	2600	2600	1100	1600 ⁽³⁾	
		910	Heavy	206...C1K1	1365	1638	896	1100	1400 ⁽³⁾	1100	550	2000	1100	550	2700	2700	1100	1600 ⁽³⁾	
		910	Normal	206...C910	1001	1365	896	1100	1400 ⁽³⁾	1100	550	2000	1100	550	2700	2700	1100	1600 ⁽³⁾	
560 kW	9	1040	Light	206...C910	1144	—	1024	1100	1400 ⁽³⁾	1300	650	2300	1300	650	3100	3100	1300	1600 ⁽³⁾	
		1040	Normal	206...C1K0	1144	1584	1024	1100	1400 ⁽³⁾	1300	650	2300	1300	650	3100	3100	1300	1600 ⁽³⁾	
		1040	Heavy	206...C1K2	1560	1872	1024	1100	1400 ⁽³⁾	1300	650	2300	1300	650	3100	3100	1300	1600 ⁽³⁾	
630 kW	9	1090	Light	206...C1K0	1199	—	1073	1100	1400 ⁽³⁾	1350	675	2400	1350	675	3200	3200	1350	1600 ⁽³⁾	
		1090	Normal	206...C1K1	1199	1638	1073	1100	1400 ⁽³⁾	1350	675	2400	1350	675	3200	3200	1350	1600 ⁽³⁾	
		1090	Heavy	206...C1K4	1635	2198	1073	1100	1400 ⁽³⁾	1350	675	2400	1350	675	3200	3200	1350	1600 ⁽³⁾	
710 kW	9	1175	Light	206...C1K1	1293	—	1157	1100	1400 ⁽³⁾	1450	725	2600	1450	725	3500	3500	1450	1600 ⁽³⁾	
		1175	Normal	206...C1K2	1293	1872	1157	1100	1400 ⁽³⁾	1450	725	2600	1450	725	3500	3500	1450	1600 ⁽³⁾	
		1175	Heavy	206...C1K5	1763	2220	1157	1100	1400 ⁽³⁾	1450	725	2600	1450	725	3500	3500	1450	1600 ⁽³⁾	
800 kW	10	1325	Heavy	206...C1K6	1988	2385	1305	1100	1400 ⁽³⁾	1650	825	2900	1650	825	3900	3900	1650	1600 ⁽³⁾	
800 kW	9	1465	Light	206...C1K2	1612	—	1443	1100	1400 ⁽³⁾	1800	900	3200	1800	900	4300	4300	1800	1600 ⁽³⁾	
		1465	Normal	206...C1K4	1612	2198	1443	1100	1400 ⁽³⁾	1800	900	3200	1800	900	4300	4300	1800	1600 ⁽³⁾	
850 kW	9	1480	Light	206...C1K4	1628	—	1457	1100	1400 ⁽³⁾	1800	900	3300	1800	900	4400	4400	1800	1600 ⁽³⁾	
		1480	Normal	206...C1K5	1628	2220	1457	1100	1400 ⁽³⁾	1800	900	3300	1800	900	4400	4400	1800	1600 ⁽³⁾	

400 Volt AC and 540 Volt DC Input Protection Devices – Floor Mount Frames 8...10 (Continued)

Applied Rating ⁽¹⁾	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		Continuous AC Input	AC Input Integral Semiconductor Fuse Size (170M) ⁽²⁾	DC Bay to Bay Integral Semiconductor Fuse Size (170M)		AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)						DC Input Integral Semiconductor Fuse Size (170M) ⁽⁸⁾	Amps
				1 min	3 sec			Amps	Amps	Dual-element Time-delay Fuse		Non Time-delay Fuse		Circuit Breaker Max Size ⁽⁶⁾	Motor Circuit Protector ⁽⁷⁾		
Frame								1/Phase Min ⁽⁴⁾	2/Phase Min ⁽⁴⁾	1/Phase Max ⁽⁵⁾	2/Phase Min ⁽⁴⁾	2/Phase Max ⁽⁵⁾	1/Phase Min ⁽⁴⁾	2/Phase Min ⁽⁴⁾	Max ⁽⁵⁾	540V DC Input	
900 kW	1600	Light	206...C1K5	1760	—	1576	1100	1400 ⁽³⁾	975	3500	1950	975	4700	4700	1950	1600 ⁽³⁾	
10	1590	Normal	206...C1K6	1749	2385	1566	1100	1400 ⁽³⁾	975	3500	1950	975	4700	4700	1950	1600 ⁽³⁾	
1000 kW	1715	Light	206...C1K6	1887	2058	1689	1100	1400 ⁽³⁾	2100	3800	2100	1050	5100	5100	2100	1600 ⁽³⁾	
10	1800	Heavy	206...C2K1	2700	3240	1773	1100	1400 ⁽³⁾	2200	4000	2200	1100	5300	5300	2200	1600 ⁽³⁾	
1250 kW	2150	Normal	206...C2K1	2365	3240	2117	1100	1400 ⁽³⁾	2650	4800	2650	1325	6400	6400	2650	1600 ⁽³⁾	
1400 kW	2330	Light	206...C2K1	2563	2796	2294	1100	1400 ⁽³⁾	2850	5200	2850	1425	6900	6900	2850	1600 ⁽³⁾	

(1) Applied rating refers to the motor that is connected to the drive. For example, a C460 drive can be used in Normal Duty mode on a 250 kW motor, in Heavy Duty mode on a 200 kW motor or in Light Duty mode on a 315 kW motor. The drive can be programmed for each mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 306 [Duty Rating].

(2) These AC line fuses (with blown fuse indicators) are included in the drive to provide drive short circuit protection. AC input protection devices for branch circuit protection based on US NEC are listed in the table. Each drive bay has one fuse per phase.

(3) Each drive bay has one fuse per DC line.

(4) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.

(5) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.

(6) Circuit breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.

(7) Recommended motor circuit protector - instantaneous trip circuit breaker. The trip setting must be set to the input current of the drive and must be sized for the continuous current of the system.

(8) These DC line fuses (with blown fuse indicators) are included in the drive to provide drive short circuit protection.

480 Volt AC and 650 Volt DC Input Protection Devices – Wall Mount Frames 1...7

Applied Rating ⁽¹⁾	Cont. Output Amps	Drive Sized For Normal Duty		Drive Sized For Heavy Duty		Output Overload Amps		Cat. No.	Continuous AC Input	AC Input Protection Devices		Circuit Breaker, Dual-element Time-delay Fuse	Circuit Breaker Max Size ⁽⁶⁾	Motor Circuit Protector ⁽⁸⁾	140M Type E Combination Motor Controller with Adjustable Current Range ⁽⁹⁾ (10)	DC Input Protection ⁽¹⁴⁾
		Output Overload Amps	3 sec	Output Overload Amps	3 sec	1 min	3 sec			Dual-element Time-delay Fuse	Non-Time Delay Fuse					
Frame		(x = F or G)	3 sec	(x = F or G)	3 sec	1 min	3 sec		kVA	Min ⁽⁴⁾	Max ⁽⁵⁾	Min Enclosure Volume (in. ³) ⁽⁷⁾	Max ⁽⁵⁾	Cat. No.	Amps	650 Volt DC Input
1.0 Hp	2.1	20x...D2P1	2.3	3.2	20x...D2P1	2.3	3.2	20x...D2P1	1.6	2	3	3840	15	M-xxx-B25 ⁽¹¹⁾	1.9	JKS-6
2.0 Hp	3.4	20x...D3P4	3.7	5.1	20x...D3P4	3.7	5.1	20x...D3P4	2.6	6	6	3840	15	M-xxx-B40 ⁽¹¹⁾	3.0	JKS-6
3.0 Hp	5	20x...D5P0	5.5	7.5	20x...D5P0	5.5	7.5	20x...D5P0	3.9	6	6	3840	20	M-xxx-B63 ⁽¹¹⁾	4.5	JKS-10
5.0 Hp	8	20x...D8P0	8.8	12.0	20x...D8P0	8.8	12.0	20x...D8P0	6.9	10	15	3840	30	M-xxx-C10 ⁽¹¹⁾	8.1	HSI15
7.5 Hp	11	20x...D011	12.1	16.5	20x...D011	12.1	16.5	20x...D011	9.5	15	20	3840	40	M-xxx-C16 ⁽¹¹⁾	11.1	HSI20
10 Hp	14	20x...D014	15.4	21.0	20x...D022 ⁽³⁾	16.5	21.0	20x...D022 ⁽³⁾	12.5	20	25	3840	50	M-xxx-C16 ⁽¹¹⁾	14.7	HSI30
1.0 Hp	2.1	20x...D2P1	3.1	3.7	20x...D2P1	3.1	3.7	20x...D2P1	1.6	2	8	3840	15	M-xxx-B25 ⁽¹¹⁾	1.9	JKS-6
2.0 Hp	3.4	20x...D3P4	5.1	6.1	20x...D3P4	5.1	6.1	20x...D3P4	2.6	4	12	3840	15	M-xxx-B40 ⁽¹¹⁾	3.0	JKS-6
3.0 Hp	5	20x...D5P0	7.5	9.0	20x...D5P0	7.5	9.0	20x...D5P0	3.9	6	20	3840	20	M-xxx-B63 ⁽¹¹⁾	4.5	JKS-10
5.0 Hp	8	20x...D8P0	12.0	14.4	20x...D8P0	12.0	14.4	20x...D8P0	6.9	10	30	3840	30	M-xxx-C10 ⁽¹¹⁾	8.1	HSI15
7.5 Hp	11	20x...D011	16.5	19.8	20x...D011	16.5	19.8	20x...D011	9.5	12	40	3840	40	M-xxx-C16 ⁽¹¹⁾	11.1	HSI20

480 Volt AC and 650 Volt DC Input Protection Devices – Wall Mount Frames 1...7 (Continued)

Applied Rating ⁽¹⁾	Frame ⁽²⁾	Drive Sized For Normal Duty		Drive Sized For Heavy Duty		Input Quantities		AC Input Protection Devices						Input Quantities		DC Input Protection ⁽¹⁴⁾			
		Cat. No.	Output Overload Amps	Cat. No.	Output Overload Amps	Continuous AC Input	kVA	Amps	Dual-element Time-delay Fuse	Circuit Breaker	Circuit Breaker, Time-delay Fuse	Motor Circuit Protector ⁽⁸⁾	140M Type E Combination Motor Controller with Adjustable Current Range ⁽⁹⁾ (10)		Continuous DC Input		Non-Time Delay Fuse		
													1 min	3 sec				(x = F or G)	1 min
480 Volt AC Input																			
10 Hp	2	20x...D014	15.4	21.0	20x...D022	24.2	33.0	10.4	12.5	20	30	55	50	3840	20	M-xxx-C16 ⁽¹¹⁾	9086	14.7	HSJ30
15 Hp	2	20x...D022	24.2	33.0	20x...D027 ⁽³⁾	33.0	40.5	16.6	19.9	30	50	80	80	3840	30	M-xxx-C25 ⁽¹²⁾	9086	23.3	HSJ40
20 Hp	3	20x...D027	29.7	40.5	20x...D034	40.5	51.0	20.6	24.8	35	60	100	100	4800	50	M-F8E-C32	9086	28.9	HSJ50
25 Hp	3	20x...D034	37.4	51.0	20x...D040	51.0	61.2	25.9	31.2	45	75	125	100	4800	50	M-F8E-C45	9086	36.4	HSJ60
30 Hp	3	20x...D040	44.0	60.0	20x...D052 ⁽³⁾	60.0	78.0	30.5	36.7	50	90	150	120	4800	50	M-F8E-C45	9086	42.9	HSJ80
40 Hp	4	20x...D052	57.2	78.0	20x...D065	78.0	97.5	39.7	47.7	65	110	200	150	4800	70			55.7	HSJ90
50 Hp	4	20x...D065	71.5	97.5	20x...D077 ⁽³⁾	97.5	117.0	49.6	59.6	90	125	250	175	4800	100			69.7	HSJ100
60 Hp	5	20x...D077	84.7	115.5	20x...D096	115.5	144.0	60.1	72.3	100	170	300	225	7200	100			84.5	HSJ150
75 Hp	5	20x...D096	105.6	144.0	20x...D125 ⁽³⁾	144.0	187.5	74.9	90.1	125	200	375	275	7200	125			105.3	HSJ175
100 Hp	6	20x...D125	137.5	187.5	20x...D156	187.5	234.0	97.6	117.4	175	275	500	375		250			137.1	HSJ200
125 Hp	6	20x...D156	171.6	234.0	20x...D186	234.0	280.8	121.8	146.5	200	350	600	450		250			171.2	HSJ300
150 Hp	6	20x...D186	204.6	279.0	20x...D248	279.0	372.0	145.2	174.6	250	400	700	550		250			204.1	HSJ400
200 Hp	6	20x...D248	272.8	372.0	20x...D302 ⁽³⁾	372.0	453.0	193.6	232.8	325	550	1000	700		400			272.1	HSJ400
250 Hp	7	20x...D302	332.2	453.0	20x...D361	453.0	543.6	235.7	283.5	400	675	1200	900		600			331.3	Bussman 170M6608
300 Hp	7	20x...D361	397.1	541.5	20x...D415	541.5	649.8	281.8	338.9	475	800	1400	1000		600			396.1	Bussman 170M6612
350 Hp	7	20x...D415	456.5	622.5				323.9	389.6	525	900	1600	1200		600			455.3	Bussman 170M6612
400 Hp	7	20x...D477	524.7	715.5				372.3	447.8	600	1000	1800	1400		600			523.3	Bussman 170M6613

(1) Applied rating refers to the motor that is connected to the drive. For example, a D022 drive can be used in Normal Duty mode on a 15 Hp motor, or in Heavy Duty mode on a 10 Hp motor. A D014 drive can be used in Heavy Duty mode on a 7.5 Hp motor with the same ratings as a D011. The drive can be programmed for either mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 306 [Duty Rating].

(2) Only enclosure codes F, N, and R. See Drive Rating Cross-reference in PowerFlex 750-Series AC Drives Installation Instructions, publication [250-IN003](#), for frame sizes of other enclosure types.

(3) This drive is the next larger frame size.

(4) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.

(5) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.

(6) Circuit breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.

(7) When using a circuit breaker or time-delay fuse with a drive that is installed in a ventilated enclosure, the enclosure volume must be greater than or equal to the minimum volume specified in this column. Application specific thermal considerations can require a larger enclosure.

(8) Recommended motor circuit protector - instantaneous trip circuit breaker. The trip setting must be set to the input current of the drive and must be sized for the continuous current of the system.

(9) Bulletin 140M with adjustable current range must have the current trip set to the minimum range so that the device does not trip.

(10) manual self-protected (Type E) combination motor controller, UL Listed for 480V/277V and 600V/347V AC Input. Not UL Listed for use on 480V or 600V Delta/Delta, corner ground, or high-resistance ground systems.

(11) Bulletin 140M must be Frame C (CE), Frame D (DF), or Frame F (FE).

(12) Bulletin 140M must be Frame D (DF) or Frame F (FE).

(13) When using a manual self-protected (Type E) combination motor controller, the drive must be installed in a ventilated or non-ventilated enclosure with the minimum volume that is specified in this column. Application specific thermal considerations can require a larger enclosure.

(14) See Fuse Certification and Test Data in PowerFlex AC Drives in Common Bus Configurations Application Guidelines, publication [DRIVES-AD002](#), for fuse self-certification and test data for Bussmann 170M and JKS fuses recommended for the DC bus fusing.

480 Volt AC and 650 Volt DC Input Protection Devices – Floor Mount Frames 8...10

Applied Rating ⁽¹⁾	Frame	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		AC Input Integral Semiconductor Fuse Size (170M) ⁽²⁾	DC Bay to Bay Integral Semiconductor Fuse Size (170M)	AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)						Input Quantities		DC Input Integral Semiconductor Fuse Size (170M) ⁽⁸⁾	
					1 min	3 sec			Amps	Continuous AC Input	Amps	Dual-Element Time-delay Fuse	1/Phase Min ⁽⁴⁾	2/Phase Min ⁽⁴⁾	Max ⁽⁵⁾	Non Time-delay Fuse		1/Phase Min ⁽⁴⁾
480V AC Input																		
300 Hp	8	370	Heavy	206...D430	555	666	349	1100	–	450	–	800	450	–	1100	1100	450	1600
350 Hp	8	430	Normal	206...D430	473	666	406	1100	–	550	–	900	550	–	1200	1200	550	1600
		414	Heavy	206...D485	621	745	391	1100	–	500	–	900	500	–	1200	1200	500	1600
400 Hp	8	454	Heavy	206...D545	681	818	428	1100	–	550	–	1000	550	–	1300	1300	550	1600
		485	Light	206...D430	534	–	458	1100	–	600	–	1000	600	–	1400	1400	600	1600
450 Hp	8	485	Normal	206...D485	534	745	458	1100	–	600	–	1000	600	–	1400	1400	600	1600
		485	Heavy	206...D617	728	926	458	1100	–	600	–	1000	600	–	1400	1400	600	1600
500 Hp	8	545	Light	206...D485	600	–	514	1100	–	650	–	1200	650	–	1600	1600	650	1600
		545	Normal	206...D545	600	818	514	1100	–	650	–	1200	650	–	1600	1600	650	1600
550 Hp	8	545	Heavy	206...D710	818	1065	514	1100	–	650	325	1200	650	325	1600	1600	650	1600
		590	Light	206...D545	649	–	557	1100	–	700	–	1300	700	–	1700	1700	700	1600
600 Hp	8	617	Normal	206...D617	679	926	582	1100	–	750	325	1300	750	325	1800	1800	800	1600
		617	Heavy	206...D740	926	1110	582	1100	–	750	375	1300	750	375	2400	1800	800	1600
650 Hp	8	710	Light	206...D617	781	–	670	1100	–	850	425	1500	850	425	2100	2100	900	1600
		710	Normal	206...D710	781	1065	670	1100	–	850	425	1500	850	425	2100	2100	900	1600
700 Hp	8	765	Light	206...D710	842	–	722	1100	–	1000	500	1700	1000	500	2200	2200	1000	1600
		740	Normal	206...D740	814	1110	698	1100	–	900	450	1600	900	450	2200	2200	900	1600
750 Hp	8	800	Light	206...D740	880	–	755	1100	–	1000	500	1800	1000	500	2400	2400	1000	1600
		800	Heavy	206...D800	1065	1278	670	1100	1400 ⁽³⁾	850	425	1500	850	425	2000	2000	850	1600 ⁽³⁾
800 Hp	9	795	Heavy	206...D960	1193	1440	750	1100	1400 ⁽³⁾	950	475	1700	950	475	2300	2300	950	1600 ⁽³⁾
		800	Normal	206...D800	880	1278	755	1100	1400 ⁽³⁾	950	475	1700	950	475	2300	2300	950	1600 ⁽³⁾
850 Hp	9	800	Heavy	206...D1020	1200	1568	755	1100	1400 ⁽³⁾	950	475	1700	950	475	2300	2300	950	1600 ⁽³⁾
		960	Light	206...D800	1056	–	906	1100	1400 ⁽³⁾	1150	575	2000	1150	575	2700	2700	1150	1600 ⁽³⁾
900 Hp	9	960	Normal	206...D960	1056	1440	906	1100	1400 ⁽³⁾	1150	575	2000	1150	575	2700	2700	1150	1600 ⁽³⁾
		960	Heavy	206...D1020	1440	1728	906	1100	1400 ⁽³⁾	1150	575	2000	1150	575	2700	2700	1150	1600 ⁽³⁾
950 Hp	9	1045	Light	206...D960	1150	–	986	1100	1400 ⁽³⁾	1250	625	2200	1250	625	3000	3000	1250	1600 ⁽³⁾
		1045	Normal	206...D1020	1150	1568	986	1100	1400 ⁽³⁾	1250	625	2200	1250	625	3000	3000	1250	1600 ⁽³⁾
1000 Hp	9	1045	Heavy	206...D1020	1568	2048	986	1100	1400 ⁽³⁾	1250	625	2200	1250	625	3000	3000	1250	1600 ⁽³⁾
		1135	Light	206...D1020	1249	–	1071	1100	1400 ⁽³⁾	1350	675	2400	1350	675	3200	3200	1350	1600 ⁽³⁾
1000 Hp	9	1135	Normal	206...D1020	1249	1728	1071	1100	1400 ⁽³⁾	1350	675	2400	1350	675	3200	3200	1350	1600 ⁽³⁾
		1135	Heavy	206...D1020	1703	2130	1071	1100	1400 ⁽³⁾	1350	675	2400	1350	675	3200	3200	1350	1600 ⁽³⁾

480 Volt AC and 650 Volt DC Input Protection Devices – Floor Mount Frames 8...10 (Continued)

Applied Rating ⁽¹⁾	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		Continuous AC Input	AC Input Integral Semiconductor Fuse Size (170M) ⁽²⁾	DC Bay to Bay Integral Semiconductor Fuse Size (170M)	AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)						Motor Circuit Protector ⁽⁷⁾	Input Quantities	DC Input Integral Semiconductor Fuse Size (170M) ⁽⁸⁾	
				1 min	3 sec				Dual-element Time-delay Fuse		Non Time-delay Fuse		Circuit Breaker Max Size ⁽⁶⁾	Continuous DC Input				Amps
									1/Phase Min ⁽⁴⁾	2/Phase Min ⁽⁴⁾	1/Phase Min ⁽⁴⁾	2/Phase Min ⁽⁴⁾						
480V AC Input																		
1100 Hp	1365	Light	206...D1K2	1502	—	1288	1100	1400 ⁽³⁾	1600	800	2900	1600	800	3900	3900	1600	1501	1600 ⁽³⁾
	1365	Normal	206...D1K3	1502	2048	1288	1100	1400 ⁽³⁾	1600	800	2900	1600	800	3900	3900	1600	1501	1600 ⁽³⁾
1250 Hp	1270	Heavy	206...D1K5	1905	2288	1199	1100	1400 ⁽³⁾	1500	750	2700	1500	750	3600	3600	1500	1396	1600 ⁽³⁾
	1420	Light	206...D1K3	1562	—	1340	1100	1400 ⁽³⁾	1700	850	3000	1700	850	4000	4000	1700	1561	1600 ⁽³⁾
1350 Hp	1420	Normal	206...D1K4	1562	2130	1340	1100	1400 ⁽³⁾	1700	850	3000	1700	850	4000	4000	1700	1561	1600 ⁽³⁾
	1540	Light	206...D1K4	1694	—	1453	1100	1400 ⁽³⁾	1800	900	3300	1800	900	4400	4400	1800	1693	1600 ⁽³⁾
1500 Hp	1525	Normal	206...D1K5	1678	2288	1439	1100	1400 ⁽³⁾	1800	900	3200	1800	900	4300	4300	1800	1677	1600 ⁽³⁾
	1655	Light	206...D1K5	1821	1986	1562	1100	1400 ⁽³⁾	1950	975	3500	1950	975	4700	4700	1950	1819	1600 ⁽³⁾
1650 Hp	1730	Heavy	206...D2K0	2595	3114	1633	1100	1400 ⁽³⁾	2050	1025	3700	2050	1025	4900	4900	2050	1902	1600 ⁽³⁾
	2070	Normal	206...D2K0	2277	3114	1953	1100	1400 ⁽³⁾	2450	1225	4400	2450	1225	5900	5900	2450	2276	1600 ⁽³⁾
2000 Hp	2240	Light	206...D2K0	2464	2688	2114	1100	1400 ⁽³⁾	2650	1325	4800	2650	1325	6300	6300	2650	2463	1600 ⁽³⁾

- (1) Applied rating refers to the motor that is connected to the drive. For example, a D4300 drive can be used in Normal Duty mode on a 350 Hp motor, in Heavy Duty mode on a 400 Hp motor, or in Light Duty mode on a 400 Hp motor. The drive can be programmed for each mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 306 [Duty Rating].
- (2) These AC line fuses (with blown fuse indicators) are included in the drive to provide drive short circuit protection. AC input protection devices for branch circuit protection based on US NEC are listed in the table. Each drive bay has one fuse per phase.
- (3) Each drive bay has one fuse per DC line.
- (4) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.
- (5) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
- (6) Circuit breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
- (7) Recommended motor circuit protector - instantaneous trip circuit breaker. The trip setting must be set to the input current of the drive and must be sized for the continuous current of the system.
- (8) These DC line fuses (with blown fuse indicators) are included in the drive to provide drive short circuit protection.

600 Volt AC and 810V DC Input Protection Devices – Wall Mount Frames 3...7

Applied Rating ⁽¹⁾	Cont. Output Amps	Drive Sized For Normal Duty		Drive Sized For Heavy Duty		AC Input Protection Devices						Input Quantities	DC Input Protection					
		Cat. No.	Output Overload Amps	Cat. No.	Output Overload Amps	Dual-element Time-delay Fuse	Non Time-delay Fuse	Circuit Breaker Max Size ⁽⁶⁾	Circuit Breaker, Dual-element Time-delay Fuse	Motor Circuit Protector ⁽⁸⁾	140M Type E Combination Motor Controller with Adjustable Current Range ⁽⁹⁾ (10)			Continuous DC Input	Non-Time Delay Fuse			
																1 min	3 sec	(x = F or G)
600 Volt AC Input																		
0.5 Hp	3	0.9	—	—	—	20x...E1P7	1.4	2.6	0.8	1	3	3	4800	1	M-xxx-B16 ⁽¹¹⁾	9086	1.0	JKS-2
1 Hp	3	1.7	20x...E1P7	1.9	2.6	20x...E2P7	2.6	4.1	1.6	2	5	5	4800	2	M-xxx-B25 ⁽¹¹⁾	9086	1.9	JKS-4
2 Hp	3	2.7	20x...E2P7	3.0	4.1	20x...E3P9	4.1	5.9	2.5	3	8	8	4800	3	M-xxx-B40 ⁽¹¹⁾	9086	3.0	JKS-5
3 Hp	3	3.9	20x...E3P9	4.3	5.9	20x...E6P1	5.9	9.2	3.7	5	10 ⁽⁵⁾	11 ⁽⁴⁾ , 20 ⁽⁵⁾	4800	5	M-D8E-B63	9086	4.3	JKS-8

600 Volt AC and 810V DC Input Protection Devices – Wall Mount Frames 3...7 (Continued)

Applied Rating ⁽¹⁾ Frame	Drive Sized For Normal Duty				Drive Sized For Heavy Duty				AC Input Protection Devices						Input Quantities		DC Input Protection ⁽¹⁴⁾							
	Cont. Output Amps		Output Overload Amps		Cat. No.		Output Overload Amps		Continuous AC Input		Dual-element Time-delay Fuse		Non Time-delay Fuse		Circuit Breaker			Motor Circuit Protector ⁽⁸⁾		140M Type E Combination Motor Controller with Adjustable Current Range ⁽⁹⁾ (10)				
	1 min	3 sec	(x = F or G)	1 min	3 sec	(x = F or G)	1 min	3 sec	Amps	Amps	Min ⁽²⁾	Max ⁽³⁾	Min ⁽²⁾	Max ⁽³⁾	Min Enclosure Volume (in.³) ⁽⁷⁾	Max Size ⁽⁶⁾		Circuit Breaker, Dual-element Time-delay Fuse	Min Enclosure Volume (in.³) ⁽⁷⁾	Cat. No.	Min Enclosure Volume (in.³) ⁽¹³⁾	Continuous DC Input	Amps	
600 Volt AC Input																								
5 Hp	3	6.1	20x...E06P1	6.7	9.2	20x...E09P0	9.2	13.5	5.7	7	13	7	15	20	4800	10	M-D8E-B63	9086	6.7	HS110	810 Volt DC Input			
7.5 Hp	3	9	20x...E09P0	9.9	13.5	20x...E011	13.5	16.5	8.4	11	19	11	25	30	4800	15	M-xxx-C10 ⁽¹²⁾	9086	9.9	HS115				
10 Hp	3	11	20x...E011	12.1	16.5	20x...E017	16.5	25.5	10.3	13	23	13	30	40	4800	15	M-xxx-C16 ⁽¹²⁾	9086	12.0	HS120				
15 Hp	3	17	20x...E017	18.7	25.5	20x...E022	25.5	33.0	16.0	20	36	20	50	50	4800	20	M-F8E-C20	9086	18.6	HS130				
20 Hp	3	22	20x...E022	24.2	33.0				20.7	26	46	26	60	70	4800	30	M-F8E-C25	9086	24.1	HS140				
	4	22				20x...E027	33.0	40.5	20.7	26	46	26	60	70	4800	30	M-F8E-C25	9086	24.1	HS140				
25 Hp	4	27	20x...E027	29.7	40.5	20x...E032	40.5	48.6	25.3	32	57	32	75	80	4800	35	M-F8E-C32	9086	29.6	HS150				
30 Hp	4	32	20x...E032	35.2	48.0				30.0	38	68	38	90	100	4800	40	M-F8E-C32	9086	35.0	HS160				
	5	32				20x...E041	48.0	61.5	30.0	38	68	38	90	100	7200	40	M-F8E-C32	13630	35.0	HS160				
40 Hp	5	41	20x...E041	45.1	61.5	20x...E052	61.5	78.0	38.5	48	87	48	115	120	7200	50			44.9	HS170				
50 Hp	5	52	20x...E052	57.2	78.0				48.8	61	110	61	145	150	7200	65			56.9	HS190				
7.5 Hp	6	9.1				20x...E012	13.7	18.0	8.5	11	19	11	25	30		15	M-xxx-C10 ⁽¹²⁾	14400	10.0	HS115				
10 Hp	6	12	20x...E012	13.2	18.0	20x...E018	18.0	27.0	11.3	14	25	14	35	40		15	M-xxx-C16 ⁽¹²⁾	14400	13.1	HS120				
15 Hp	6	18	20x...E018	19.8	27.0	20x...E023	27.0	34.5	16.9	21	38	21	50	60		25	M-F8E-C20	14400	19.7	HS130				
20 Hp	6	23	20x...E023	25.3	34.5	20x...E028	34.5	42.0	21.6	27 ⁽⁴⁾	49 ⁽⁴⁾	27 ⁽⁴⁾	65	70		30	M-F8E-C25	14400	25.2	HS140				
	6	24	20x...E024	26.4	36.0				22.5	28	51	28	70	70		30	M-F8E-C25	14400	26.3	HS140				
25 Hp	6	22				20x...E024	33.0	39.6	20.7	26	46	26	60	70		30	M-F8E-C25	14400	24.1	HS140				
30 Hp	6	28	20x...E028	30.8	42.0	20x...E033	42.0	50.4	26.3	35	60	35	80	80		35	M-F8E-C32	14400	30.7	HS150				
40 Hp	6	33	20x...E033	36.3	49.5	20x...E042	49.5	63.0	31.0	40	70	40	95	100		40	M-F8E-C32	14400	36.1	HS160				
50 Hp	6	42	20x...E042	46.2	63.0	20x...E053	63.0	79.5	39.4	50	90	50	120	120		50			46.0	HS170				
60 Hp	6	53 ⁽⁴⁾	20x...E053	58.3	79.5	20x...E063	78.0	94.5	49.8 ⁽⁴⁾	60	110	60	150 ⁽⁴⁾	150		65			58.0 ⁽⁴⁾	HS190				
	6	52 ⁽⁵⁾							48.8 ⁽⁵⁾	60	110	60	145 ⁽⁵⁾			75			56.9 ⁽⁵⁾	HS190				
75 Hp	6	63	20x...E063	69.3	94.5	20x...E077	94.5	115.5	59.1	75	135	75	175	180		75			69.0	HS1110				
100 Hp	6	77	20x...E077	84.7	115.5	20x...E099	115.5	148.5	72.3	90	165	90	215	220		95			84.3	HS1150				
125 Hp	6	99	20x...E099	108.9	148.5	20x...E125	148.5	187.5	92.9	115	210	115	280	280		120			108.4	HS1175				
150 Hp	6	125	20x...E125	137.5	187.5	20x...E144	187.5	225.0	117.4	145	265	145	350	360		150			136.8	HS1225				
	6	144	20x...E144	158.4	216.0				135.2	170	300	170	400	400		170			157.6	HS1250				
200 Hp	7	144				20x...E192	216.0	288.0	135.2	170	305	170	405	410		170			157.6	HS1250				
250 Hp	7	192	20x...E192	211.2	288.0	20x...E242	288.0	363.0	180.3	225	405	225	540	550		230			210.2	HS1350				
300 Hp	7	242	20x...E242	266.2	363.0	20x...E289	363.0	435.6	227.2	285	510	285	680	690		285			264.9	HS1400				
	7	289	20x...E289	317.9	433.5				271.3	340	600	340	800	800		340			316.4	HS1500				

- (1) Applied rating refers to the motor that is connected to the drive. For example, a E063 drive can be used in Normal Duty mode on a 60 Hp motor, in Heavy Duty mode on a 50 Hp motor. The drive can be programmed for each mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 306 (Duty Rating).
- (2) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.
- (3) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
- (4) Normal duty.
- (5) Heavy duty.
- (6) Circuit breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
- (7) When using a circuit breaker or time-delay fuse with a drive that is installed in a ventilated enclosure, the enclosure volume must be greater than or equal to the minimum volume specified in this column. Application specific thermal considerations can require a larger enclosure.
- (8) Recommended motor circuit protector - instantaneous trip circuit breaker. The trip setting must be set to the input current of the drive and must be sized for the continuous current of the system.
- (9) Bulletin 140M with adjustable current range must have the current trip set to the minimum range so that the device does not trip.
- (10) manual self-protected (Type E) combination motor controller, UL Listed for 480V/277V and 600V/347V AC Input. Not UL Listed for use on 480V or 600V Delta/Delta, corner ground, or high-resistance ground systems.
- (11) Bulletin 140M must be Frame C (C2E), Frame D (D8F), or Frame F (F8E).
- (12) Bulletin 140M must be Frame D (D8F) or Frame F (F8E).
- (13) When using a manual self-protected (Type E) combination motor controller, the drive must be installed in a ventilated or non-ventilated enclosure with the minimum volume that is specified in this column. Application specific thermal considerations can require a larger enclosure.
- (14) See Fuse Certification and Test Data in PowerFlex AC Drives in Common Bus Configurations Application Guidelines, publication [DRIVES-AT002](#), for fuse self-certification and test data for Busmann 170M and JIS fuses recommended for the DC bus fusing.

600 Volt AC and 810V DC Input Protection Devices – Floor Mount Frames 8...10

Applied Rating (1)	Frame	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		Continuous AC Input	AC Input Integral Semiconductor or Fuse Size (170M) (2)	DC Bay to Bay Integral Semiconductor or Fuse Size (170M6648)	AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)					Motor Circuit Protector (6)	DC Input Integral Semiconductor or Fuse Size (170M6253) (7)		
					1 min	3 sec				Dual-element Time-delay Fuse		Non Time-delay Fuse					Circuit Breaker Max Size (5)	
										1/ Phase Min (5)	2/ Phase Min (3)	Max (4)	1/ Phase Min (5)	2/ Phase Min (3)				Max (4)
600V AC Input																		
250 Hp	8	272	Heavy	206...E295	408	490	257	900	-	350	175	600	350	175	800	800	350	1000
300 Hp	8	295	Heavy	206...E355	443	533	278	900	-	350	175	700	350	175	900	900	350	1000
		295	Normal	206...E295	325	490	278	900	-	400	200	700	400	200	1000	1000	400	1000
350 Hp	8	355	Light	206...E295	391	-	335	900	-	450	225	800	450	225	1100	1100	450	1000
		355	Normal	206...E355	391	533	335	900	-	450	225	800	450	225	1100	1100	450	1000
		329	Heavy	206...E395	494	593	310	900	-	400	200	700	400	200	1000	1000	400	1000
		355	Heavy	206...E435	533	639	335	900	-	450	225	800	450	225	1100	1100	450	1000
400 Hp	8	395	Light	206...E355	435	-	373	900	-	500	250	900	500	250	1200	1200	500	1000
		395	Normal	206...E395	435	593	373	900	-	500	250	900	500	250	1200	1200	500	1000
		395	Heavy	206...E460	593	711	373	900	-	500	250	900	500	250	1200	1200	500	1000
450 Hp	8	435	Light	206...E395	479	-	411	900	-	550	275	1000	550	275	1300	1300	550	1000
		435	Normal	206...E435	479	639	411	900	-	500	250	900	500	250	1200	1200	500	1000
		425	Heavy	206...E510	638	765	401	900	-	550	275	1000	550	275	1300	1300	550	1000

600 Volt AC and 810V DC Input Protection Devices – Floor Mount Frames 8...10 (Continued)

Applied Rating (1)	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		Continuous AC Input	AC Input Integral Semiconductor Fuse Size (170M)(2)	DC Bay to Bay Integral Semiconductor Fuse Size (170M6648)	AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)						Motor Circuit Protector (6)	DC Input Integral Semiconductor Fuse Size (170M6253)(7)
				1 min	3 sec				Amps	Amps	Dual-element Time-delay Fuse			Non Time-delay Fuse		
Frame									1/ Phase Min(3)	2/ Phase Min(3)	Max(4)	1/ Phase Min(3)	2/ Phase Min(3)	Max(4)		
600V AC Input																
500 Hp	460	Light	206...E435	506	-	434	900	-	550	275	1000	550	275	1300	1300	1000
	510	Light	206...E460	561	-	481	900	-	650	325	1100	650	325	1500	1500	1000
550 Hp	460	Normal	206...E460	506	711	434	900	-	550	275	1000	550	275	1300	1300	1000
	510	Normal	206...E510	561	765	481	900	-	650	325	1100	650	325	1500	1500	1000
500 Hp	545	Light	206...E510	600	-	514	900	-	650	325	1200	650	325	1600	1600	1000
600 Hp	510	Heavy	206...E595	765	918	481	900	1000	600	300	1100	600	300	1400	1400	1000
	595	Heavy	206...E630	893	1071	562	900	1000	700	350	1300	700	350	1700	1700	1000
700 Hp	595	Normal	206...E595	655	918	562	900	1000	700	350	1300	700	350	1700	1700	1000
	630	Heavy	206...E760	945	1149	595	900	1000	750	375	1300	750	375	1800	1800	1000
750 Hp	630	Normal	206...E630	693	1071	595	900	1000	750	375	1300	750	375	1800	1800	1000
	595	Light	206...E595	693	-	651	900	1000	800	400	1500	800	400	2000	2000	1000
800 Hp	700	Heavy	206...E825	1050	1260	661	900	1000	850	425	1500	850	425	2000	2000	1000
	760	Heavy	206...E900	1140	1368	717	900	1000	900	450	1600	900	450	2200	2200	1000
900 Hp	760	Normal	206...E760	836	1140	717	900	1000	900	450	1600	900	450	2200	2200	1000
	815	Heavy	206...E980	1223	1470	769	900	1000	950	475	1700	950	475	2300	2300	1000
950 Hp	825	Normal	206...E825	908	1260	779	900	1000	950	475	1800	950	475	2300	2300	1000
	835	Light	206...E760	919	-	788	900	1000	1000	500	1800	1000	500	2400	2400	1000
1000 Hp	900	Normal	206...E900	990	1368	849	900	1000	1050	525	1900	1050	525	2500	2500	1000
	900	Light	206...E825	990	-	849	900	1000	1050	525	1900	1050	525	2500	2500	1000
1100 Hp	980	Normal	206...E980	1078	1470	925	900	1000	1150	575	2100	1150	575	2800	2800	1000
	980	Light	206...E900	1078	-	925	900	1000	1150	575	2100	1150	575	2800	2800	1000
1224 Hp	1045	Heavy	206...E1K1	1380	1665	868	900	1000	1100	550	2000	1100	550	2600	2600	1000
	1110	Light	206...E980	1150	-	986	900	1000	1250	625	2200	1250	625	3000	3000	1000
	1110	Normal	206...E1K1	1221	1665	1048	900	1000	1300	650	2400	1300	650	3100	3100	1000
810V DC Input																
507																1000
562																1000
507																1000
562																1000
601																1000
562																1000
656																1000
656																1000
695																1000
695																1000
761																1000
772																1000
838																1000
838																1000
838																1000
899																1000
910																1000
921																1000
993																1000
993																1000
1081																1000
1081																1000
1015																1000
1152																1000
1224																1000

600 Volt AC and 810V DC Input Protection Devices – Floor Mount Frames 8...10 (Continued)

Applied Rating ⁽¹⁾	Frame	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		Continuous AC Input	AC Input Integral Semiconductor Fuse Size (170M) ⁽²⁾	DC Bay to Bay Integral Semiconductor or Fuse Size (170M6648)	AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)							
					1 min	3 sec				Amps	Amps	Dual-element Time-delay Fuse			Non Time-delay Fuse		
										1/ Phase Min ⁽³⁾	2/ Phase Min ⁽³⁾	Max ⁽⁴⁾	1/ Phase Min ⁽³⁾	2/ Phase Min ⁽³⁾	Max ⁽⁴⁾	Circuit Breaker Max Size ⁽⁵⁾	
1200 Hp	10	1220	Light	206...E1K1	1342	1464	1151	900	1000	1450	725	2600	1450	725	3500	3500	3500
1250 Hp	10	1190	Heavy	206...E1K4	1785	2145	1123	900	1000	1400	700	2500	1400	700	3400	3400	3400
1400 Hp	10	1430	Normal	206...E1K4	1573	2145	1350	900	1000	1700	850	3000	1700	850	4100	4100	4100
1500 Hp	10	1530	Light	206...E1K4	1683	1836	1444	900	1000	1800	900	3200	1800	900	4300	4300	4300

600V AC Input

810V DC Input

1345	1000
1312	1000
1577	1000
1687	1000

(1) Applied rating refers to the motor that is connected to the drive. For example, a E420 drive can be used in Normal Duty mode on a 450 Hp motor, in Heavy Duty mode on a 500 Hp motor, or in Light Duty mode on a 500 Hp motor. The drive can be programmed for each mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 306 [Duty Rating].

(2) These AC line fuses (with blown fuse indicators) are included in the drive to provide drive short circuit protection. AC input protection devices for branch circuit protection based on US NEC are listed in the table. Each drive bay has one fuse per phase.

(3) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.

(4) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.

(5) Circuit breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.

(6) Recommended motor circuit protector - instantaneous trip circuit breaker. The trip setting must be set to the input current of the drive and must be sized for the continuous current of the system.

(7) These DC line fuses (with blown fuse indicators) are included in the drive to provide drive short circuit protection.

690 Volt AC and 932V DC Input Protection Devices - Wall Mount Frames 6 and 7

Applied Rating ⁽¹⁾	Frame	Cont. Output Amps	Drive Sized For Normal Duty		Drive Sized For Heavy Duty		Continuous AC Input		AC Input Protection Devices						
			Cat. No.	Output Overload Amps	Cat. No.	Output Overload Amps	Amps	Amps	Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker Max Size ⁽⁶⁾	Motor Circuit Protector ⁽⁷⁾	
			(x = ForG)	1 min	3 sec	(x = ForG)	1 min	3 sec	Amps	Amps	Min ⁽²⁾	Max ⁽⁵⁾			Min ⁽²⁾
5.5 kW	6	9				20x...F011	13.5	18.0	8.4	11	19	11	25	30	15
7.5 kW	6	12	20x...F011	18.0	22.5	20x...F015	18.0	22.5	11.2	14	25	14	35	40	15
11 kW	6	15	20x...F015	16.5	22.5	20x...F020	22.5	30.0	14.1	18	32	18	40	50	20
15 kW	6	20	20x...F020	22.0	30.0	20x...F023	30.0	36.0	18.7	23	42	23	55	60	25
18.5 kW	6	23	20x...F023	25.3	34.5	20x...F030	34.5	45.0	21.6	27 ⁽³⁾ , 25 ⁽⁴⁾	48 ⁽³⁾ , 50 ⁽⁴⁾	27 ⁽³⁾ , 25 ⁽⁴⁾	65	70	30
22 kW	6	30	20x...F030	33.0	45.0	20x...F034	45.0	54.0	28.1	35	65	35	85	90	40
30 kW	6	34	20x...F034	37.4	51.0	20x...F046	51.0	69.0	31.9	40	70	40	95	100	40
37 kW	6	46	20x...F046	50.6	69.0	20x...F050	69.0	82.8	43.1	55	95	55	130	130	55
45 kW	6	50	20x...F050	55.0	75.0	20x...F061	75.0	91.5	46.9	60	105	60	140	150	60
55 kW	6	61	20x...F061	67.1	91.5	20x...F082	91.5	123.0	57.2	70	130	70	170	180	75
75 kW	6	82	20x...F082	90.2	123.0	20x...F098	123.0	147.6	76.8	95	175	95	230	240	100
90 kW	6	98	20x...F098	107.8	147.0	20x...F119	147.0	178.5	91.8	115	205	115	275	280	115

690 Volt AC Input

932 Volt DC Input

9.9	HSJ15
13.2	HSJ20
16.5	HSJ25
21.9	HSJ35
25.2	HSJ40
32.9	HSJ50
37.3	HSJ60
50.5	HSJ80
54.8	HSJ90
66.9	HSJ100
89.9	HSJ150
107.5	HSJ175

690 Volt AC and 932V DC Input Protection Devices - Wall Mount Frames 6 and 7 (Continued)

Applied Rating ⁽¹⁾	Drive Sized For Normal Duty			Drive Sized For Heavy Duty			AC Input Protection Devices				DC Input Protection					
	Cont. Output Amps	Output Overload Amps		Cat. No. (x = F or G)	Output Overload Amps		Continuous AC Input Amps	Dual Element Time Delay Fuse Min ⁽²⁾	Non-Time Delay Fuse Min ⁽²⁾	Circuit Breaker Max Size ⁽⁶⁾	Motor Circuit Protector ⁽⁷⁾	Continuous DC Input Amps	Non-Time Delay Fuse			
		1 min	3 sec		1 min	3 sec								Max ⁽⁵⁾	Max ⁽⁵⁾	
690 Volt AC Input																
110 kW	6	119	20x...F119	130.9	178.5	20x...F142	178.5	214.2	111.5	140	250	140	335	340	140	HSJ200
132 kW	6	142	20x...F142	156.2	213.0				133.1	165	300	165	400	400	170	HSJ250
	7	142				20x...F171	213.0	256.5	133.1	165	300	165	400	400	170	HSJ250
160 kW	7	171	20x...F171	188.1	256.5	20x...F212	256.5	318.0	160.2	200	360	200	480	490	205	HSJ300
200 kW	7	212	20x...F212	233.2	318.0	20x...F263	318.0	394.5	198.7	250	445	250	595	600	250	HSJ350
250 kW	7	263	20x...F263	289.3	394.5				246.5	310	555	310	740	740	310	HSJ500

(1) Applied rating refers to the motor that is connected to the drive. For example, a F061 drive can be used in Normal Duty mode on a 55 kW motor, in Heavy Duty mode on a 45 kW motor. The drive can be programmed for each mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 306 (Duty Rating).
 (2) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.
 (3) Normal duty.
 (4) Heavy duty.
 (5) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
 (6) Circuit breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
 (7) Recommended motor circuit protector - instantaneous trip circuit breaker. The trip setting must be set to the input current of the drive and must be sized for the continuous current of the system.

690 Volt AC and 932V DC Input Protection Devices – Floor Mount Frames 8...10

Applied Rating ⁽¹⁾	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		AC Input Continuous AC Input Amps	AC Input Integral Semiconductor or Fuse Size (170M) ⁽²⁾	DC Bay to Bay Integral Semiconductor Fuse Size (170M6648)	AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)						Circuit Breaker Max Size ⁽⁵⁾	Motor Circuit Protector ⁽⁶⁾	DC Input Integral Semiconductor Fuse Size (170M6253) ⁽⁷⁾				
				1 min	3 sec				Dual-element Time-delay Fuse		Non Time-delay Fuse		Amps	Amps				1/Phase Min ⁽³⁾	2/Phase Min ⁽³⁾	Max ⁽⁴⁾	Max ⁽⁴⁾
									1/Phase Min ⁽³⁾	2/Phase Min ⁽³⁾	1/Phase Min ⁽³⁾	2/Phase Min ⁽³⁾									
690V AC Input																					
200 kW	8	215	Heavy	206...F265	323	375	203	900	—	250	125	500	250	125	600	600	250	1000			
250 kW	8	265	Normal	206...F265	292	375	250	900	—	300	150	600	300	150	800	800	300	1000			
	8	265	Heavy	206...F330	398	473	250	900	—	300	150	600	300	150	800	800	300	1000			
300 kW	8	308	Heavy	206...F370	462	555	290	900	—	400	200	700	400	200	900	900	400	1000			
315 kW	8	330	Light	206...F265	363	—	311	900	—	400	200	700	400	200	900	900	400	1000			
	8	330	Normal	206...F330	363	473	311	900	—	400	200	700	400	200	900	900	400	1000			
355 kW	8	370	Light	206...F330	407	—	349	900	—	450	225	800	450	225	1100	1100	450	1000			
	8	370	Normal	206...F370	407	555	349	900	—	450	225	800	450	225	1100	1100	450	1000			
375 kW	8	370	Heavy	206...F415	555	639	349	900	—	450	225	800	450	225	1100	1100	450	1000			
	8	375	Heavy	206...F460	563	675	353	900	—	450	225	800	450	225	1100	1100	450	1000			

690 Volt AC and 932V DC Input Protection Devices – Floor Mount Frames 8...10 (Continued)

Applied Rating ⁽¹⁾	Frame	Cont. Output Amps	Duty	Cat. No.	Output Overload Amps		AC Input Integral Semiconductor Fuse Size (170M) ⁽²⁾	AC Input Integral Semiconductor Fuse Size (170M6253) ⁽⁷⁾	AC Input Protection Devices Recommended for Branch Circuit Protection (Does not apply to 21G Drives with Options)						DC Bay to Bay Integral Semiconductor Fuse Size (170M6648)	Amps	DC Input Integral Semiconductor Fuse Size (170M6253) ⁽⁷⁾	Amps
					1 min	3 sec			1/Phase Min ⁽³⁾	2/Phase Min ⁽³⁾	Max ⁽⁴⁾	1/Phase Min ⁽³⁾	2/Phase Min ⁽³⁾	Max ⁽⁴⁾				
690V AC Input																		
400 kW	8	410	Light	206...F370	451	386	900	900	500	250	900	500	250	1200	1200	1200	1000	451
		415	Normal	206...F415	457	391	900	900	500	250	900	500	250	1200	1200	1200	1000	457
		413	Heavy	206...F500	620	389	900	900	500	250	900	500	250	1200	1200	1200	1000	454
450 kW	8	460	Light	206...F415	506	433	900	900	550	275	1000	550	275	1300	1300	1300	1000	506
		460	Normal	206...F460	506	433	900	900	550	275	1000	550	275	1300	1300	1300	1000	506
500 kW	8	500	Light	206...F460	550	471	900	900	600	300	1100	600	300	1500	1500	1500	1000	550
		500	Normal	206...F500	550	471	900	900	600	300	1100	600	300	1500	1500	1500	1000	550
530 kW	8	530	Light	206...F500	583	499	900	900	650	325	1200	650	325	1500	1500	1500	1000	583
450 kW	9	460	Heavy	206...F590	690	433	900	1000	550	275	1000	550	275	1300	1300	1300	1000	506
500 kW	9	500	Heavy	206...F650	750	471	900	1000	600	300	1100	600	300	1400	1400	1400	1000	550
560 kW	9	590	Heavy	206...F710	885	1065	900	1000	700	350	1300	700	350	1700	1700	1700	1000	649
		590	Normal	206...F590	649	885	900	1000	700	350	1300	700	350	1700	1700	1700	1000	649
630 kW	9	650	Heavy	206...F765	975	1170	900	1000	750	375	1400	750	375	1800	1800	1800	1000	715
		650	Normal	206...F650	715	975	900	1000	750	375	1400	750	375	1800	1800	1800	1000	715
		650	Light	206...F590	715	612	900	1000	750	375	1400	750	375	1800	1800	1800	1000	715
710 kW	9	750	Heavy	206...F795	1125	1350	900	1000	900	450	1600	900	450	2100	2100	2100	1000	825
		710	Normal	206...F710	781	1065	900	1000	900	450	1600	900	450	2100	2100	2100	1000	781
		710	Light	206...F650	781	669	900	1000	900	450	1600	900	450	2100	2100	2100	1000	781
750 kW	9	765	Normal	206...F765	842	1170	900	1000	900	450	1600	900	450	2200	2200	2200	1000	842
800 kW	9	795	Heavy	206...F960	1193	1440	900	1000	950	475	1700	950	475	2200	2200	2200	1000	875
		795	Normal	206...F795	875	1350	900	1000	950	475	1700	950	475	2200	2200	2200	1000	875
850 kW	9	790	Light	206...F710	869	744	900	1000	950	475	1700	950	475	2200	2200	2200	1000	869
		860	Light	206...F765	946	810	900	1000	1000	500	1800	1000	500	2400	2400	2400	1000	946
900 kW	9	960	Normal	206...F960	1056	1440	900	1000	1150	575	2000	1150	575	2700	2700	2700	1000	1056
		960	Light	206...F795	1056	904	900	1000	1150	575	2000	1150	575	2700	2700	2700	1000	1056
		865	Heavy	206...F1K0	1298	1560	900	1000	1000	500	1800	1000	500	2400	2400	2400	1000	952
1000 kW	9	1020	Light	206...F795	1122	904	900	1000	1200	600	2200	1200	600	2900	2900	2900	1000	1056
1100 kW	10	1040	Normal	206...F1K0	1144	1560	900	1000	1250	625	2200	1250	625	2900	2900	2900	1000	1144
1120 kW	10	1150	Light	206...F1K0	1265	1380	900	1000	1350	675	2400	1350	675	3200	3200	3200	1000	1265
1400 kW	10	1400	Normal	206...F1K4	1540	2100	900	1000	1350	675	2500	1350	675	3300	3300	3300	1000	1276
		1400	Light	206...F1K4	1540	2100	900	1000	1650	825	3000	1650	825	4000	4000	4000	1000	1540
1500 kW	10	1485	Light	206...F1K4	1634	1782	900	1000	1750	875	3100	1750	875	4200	4200	4200	1000	1634

- (1) Applied rating refers to the motor that is connected to the drive. For example, a F400 drive can be used in Normal Duty mode on a 400 kW motor, in Heavy Duty mode on a 355 kW motor or in Light Duty mode on a 450 kW motor. The drive can be programmed on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 306 [Duty Rating].
- (2) These AC line fuses (with blown fuse indicators) are included in the drive to provide drive short circuit protection. AC input protection devices for branch circuit protection based on US NEC are listed in the table. Each drive bay has one fuse per phase.
- (3) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.
- (4) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
- (5) Circuit breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings that are shown are maximum.
- (6) Recommended motor circuit protector - instantaneous trip circuit breaker. The trip setting must be set to the input current of the drive and must be sized for the continuous current of the system.
- (7) These DC line fuses (with blown fuse indicators) are included in the drive to provide drive short circuit protection.

Short Circuit Current Ratings for Drives with Options

Default ratings (no added protection) shown. A ‘•’ indicates ratings that can be achieved with additional protection.

400V AC Input

Drive Cat. No.	Frame	Duty Cycle	kW	Short Circuit Current Rating (kA)			
				Circuit Breaker Only (P3) ⁽¹⁾	Circuit Breaker with Input Contactor (P3 with P11) ⁽¹⁾	Molded Case Switch Only (P5) ⁽²⁾	Molded Case Switch with Input Contactor (P5 with P11) ⁽²⁾
21G...C460	8	LD	315	100	30	65 or • 100 with 700...800 A Class L fuse	5 or • 30 with 700...1200 A Class L fuse • 30 with 700...1200 A CB
		ND	250	100	30 or • 65 with 600 A Class J fuse	65	5 or • 65 with 600 A Class J fuse • 30 with 600...1000 A Class L fuse • 30 with 600...1200 A CB
		HD	200	100	5 or • 100 with 500...600 A Class J fuse • 18 with 600...800 A Class L fuse • 18 with 500 A CB	65	5 or • 100 with 500...600 A Class J fuse • 18 with 600...800 A Class L fuse • 18 with 500 A CB
21G...C540	8	LD	315	100	30	65 or • 100 with 750...800 A Class L fuse	5 or • 30 with 750...1300 A Class L fuse • 30 with 800...1200 A CB
		ND	315	100	30	65 or • 100 with 700...800 A Class L fuse	5 or • 30 with 700...1200 A Class L fuse • 30 with 700...1200 A CB
		HD	250	100	30 or • 65 with 600 A Class J fuse	65	5 or • 65 with 600 A Class J fuse • 30 with 600...1000 A Class L fuse • 30 with 600...1200 A CB
21G...C567	8	LD	355	100	30	65 or • 100 with 800 A Class L fuse	5 or • 30 with 800...1300 A Class L fuse • 30 with 800...1200 A CB
		ND	315	100	30	65 or • 100 with 750...800 A Class L fuse	5 or • 30 with 750...1200 A Class L fuse • 30 with 800...1200 A CB
		HD	250	100	30 or • 65 with 600 A Class J fuse	65	5 or • 65 with 600 A Class J fuse • 30 with 600...1000 A Class L fuse • 30 with 600...1200 A CB
21G...C650	8	LD	400	100	42	65 or • 100 with 1000...1200 A Class L fuse	5 or • 42 with 1000...1600 A Class L fuse • 42 with 1000...1200 A CB
		ND	355	100	42	65 or • 100 with 850...1200 A Class L fuse	5 or • 42 with 850...1400 A Class L fuse • 42 with 900...1200 A CB
		HD	315	100	30	65 or • 100 with 700...800 A Class L fuse	5 or • 30 with 700...1200 A Class L fuse • 30 with 700...1200 A CB
21G...C750	8	LD	450	100	42	65 or • 100 with 1000...1200 A Class L fuse	5 or • 42 with 1000...1700 A Class L fuse • 42 with 1000...1200 A CB
		ND	400	100	42	65 or • 100 with 1000...1200 A Class L fuse	5 or • 42 with 1000...1600 A Class L fuse • 42 with 1000...1200 A CB
		HD	315	100	30	65 or • 100 with 700...800 A Class L fuse	5 or • 30 with 750...1300 A Class L fuse • 30 with 800...1200 A CB
21G...C770	8	LD	450	100	42	65 or • 100 with 1000...1200 A Class L fuse	5 or • 42 with 1100...1800 A Class L fuse • 42 with 1100...1200 A CB
		ND	400	100	42	65 or • 100 with 1000...1200 A Class L fuse	5 or • 42 with 1000...1700 A Class L fuse • 42 with 1000...1200 A CB
		HD	355	100	42	65 or • 100 with 700...800 A Class L fuse	5 or • 42 with 800...1400 A Class L fuse • 42 with 800...1200 A CB

400V AC Input (Continued)

Drive Cat. No.	Frame	Duty Cycle	kW	Short Circuit Current Rating (kA)			
				Circuit Breaker Only (P3) ⁽¹⁾	Circuit Breaker with Input Contactor (P3 with P11) ⁽¹⁾	Molded Case Switch Only (P5) ⁽²⁾	Molded Case Switch with Input Contactor (P5 with P11) ⁽²⁾
21G...C910	9	LD	560	100			
		ND	500	100			
		HD	400	100			
21G...C1K0	9	LD	630	100			
		ND	560	100			
		HD	500	100			
21G...C1K1	9	LD	710	100			
		ND	630	100			
		HD	500	100			
21G...C1K2	9	LD	800	100			
		ND	710	100			
		HD	560	100			
21G...C1K4	9	LD	850	100			
		ND	800	100			
		HD	630	100			
21G...C1K5	9	LD	900	100			
		ND	850	100			
		HD	710	100			
21G...C1K6	10	LD	1000	N/A			
		ND	900	N/A			
		HD	710	N/A			
21G...C2K1	10	LD	1400	N/A			
		ND	1250	N/A			
		HD	1000	N/A			

(1) These circuit breakers are considered branch circuit protection for the unit.

(2) No additional protection is provided with the P5 molded case switch option. Branch circuit protection is required based on NEC guidelines.

480V AC Input

Drive Cat. No.	Frame	Duty Cycle	Hp	Short Circuit Current Rating (kA)			
				Circuit Breaker Only (P3) ⁽¹⁾	Circuit Breaker with Input Contactor (P3 with P11) ⁽¹⁾	Molded Case Switch Only (P5) ⁽²⁾	Molded Case Switch with Input Contactor (P5 with P11) ⁽²⁾
21G...D430	8	LD	400	100	30 or • 65 with 600 A Class J fuse	65	5 or • 65 with 600 A Class J fuse • 30 with 600...1000 A Class L fuse • 30 with 600...1200 A CB
		ND	350	100	30 or • 65 with 550...600 A Class J fuse	65	30 or • 65 with 550...600 A Class J fuse
		HD	300	100	5 or • 100 with 450...600 A Class J fuse • 18 with 600...800 A Class L fuse • 18 with 500 A CB	65	5 or • 100 with 500...600 A Class J fuse • 18 with 600...800 A Class L fuse • 18 with 500 A CB
21G...D485	8	LD	450	100	30	65 or • 100 with 800 A Class L fuse	5 or • 30 with 650...1200 A Class L fuse • 30 with 700...1200 A CB
		ND	400	100	30 or • 65 with 600 A Class J fuse	65	5 or • 65 with 600 A Class J fuse • 30 with 600...1000 A Class L fuse • 30 with 600...1200 A CB
		HD	350	100	5 or • 100 with 500...600 A Class J fuse • 18 with 600...900 A Class L fuse	65	5 or • 100 with 500...600 A Class J fuse • 18 with 600...900 A Class L fuse

480V AC Input (Continued)

Drive Cat. No.	Frame	Duty Cycle	Hp	Short Circuit Current Rating (kA)			
				Circuit Breaker Only (P3) ⁽¹⁾	Circuit Breaker with Input Contactor (P3 with P11) ⁽¹⁾	Molded Case Switch Only (P5) ⁽²⁾	Molded Case Switch with Input Contactor (P5 with P11) ⁽²⁾
21G...D545	8	LD	500	100	30	65 or • 100 with 800 A Class L fuse	5 or • 30 with 700...1300 A Class L fuse • 30 with 700...1200 A CB
		ND	450	100	30	65 or • 100 with 650...800 A Class L fuse	5 or • 30 with 650...1200 A Class L fuse • 30 with 700...1200 A CB
		HD	350	100	30 or • 65 with 550...600 A Class J fuse	65	5 or • 65 with 550...600 A Class J fuse • 30 with 600...1000 A Class L fuse • 30 with 600...1200 A CB
21G...D617	8	LD	600	100	42	65 or • 100 with 850...1200 A Class L fuse	5 or • 42 with 850...1500 A Class L fuse • 42 with 900...1200 A CB
		ND	500	100	30	65 or • 100 with 750...800 A Class L fuse	5 or • 30 with 750...1300 A Class L fuse • 30 with 800...1200 A CB
		HD	400	100	30 or • 65 with 600 A Class J fuse	65	5 or • 65 with 600 A Class J fuse • 30 with 600...1000 A Class L fuse • 30 with 600...1200 A CB
21G...D710	8	LD	650	100	42	65 or • 100 with 1000...1200 A Class L fuse	5 or • 42 with 1000...1700 A Class L fuse • 42 with 1000...2000 A CB
		ND	600	100	42	65 or • 100 with 850...1200 A Class L fuse	5 or • 42 with 850...1500 A Class L fuse • 42 with 900...1200 A CB
		HD	450	100	30	65 or • 100 with 650...800 A Class L fuse	5 or • 30 with 650...1200 A Class L fuse • 30 with 700...1200 A CB
21G...D740	8	LD	700	100	42	65 or • 100 with 1000...1200 A Class L fuse	5 or • 42 with 1000...1700 A Class L fuse • 42 with 1000...2000 A CB
		ND	650	100	42	65 or • 100 with 900...1200 A Class L fuse	5 or • 42 with 900...1600 A Class L fuse • 42 with 900...2000 A CB
		HD	500	100	30	65 or • 100 with 750...800 A Class L fuse	5 or • 30 with 750...1300 A Class L fuse • 30 with 800...1200 A CB
21G...D800	9	LD	800	100			
		ND	700	100			
		HD	600	100			
21G...D960	9	LD	900	100			
		ND	800	100			
		HD	700	100			
21G...D1K0	9	LD	1000	100			
		ND	900	100			
		HD	750	100			
21G...D1K2	9	LD	1100	100			
		ND	1000	100			
		HD	800	100			
21G...D1K3	9	LD	1250	100			
		ND	1100	100			
		HD	900	100			
21G...D1K4	9	LD	1350	100			
		ND	1250	100			
		HD	1000	100			
21G...D1K5	10	LD	1500	N/A			
		ND	1350	N/A			
		HD	1100	N/A			
21G...D2K0	10	LD	2000	N/A			
		ND	1750	N/A			
		HD	1650	N/A			

- (1) These circuit breakers are considered branch circuit protection for the unit.
 (2) No additional protection is provided with the P5 molded case switch option. Branch circuit protection is required based on NEC guidelines.

600V AC Input

Drive Cat. No.	Frame	Duty Cycle	Hp	Short Circuit Current Rating (kA)			
				Circuit Breaker Only (P3) ⁽¹⁾	Circuit Breaker with Input Contactor (P3 with P11) ⁽¹⁾	Molded Case Switch Only (P5) ⁽²⁾	Molded Case Switch with Input Contactor (P5 with P11) ⁽²⁾
21G...E295	8	LD	350	50	<ul style="list-style-type: none"> • 18 with 601...700 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
		ND	300	50	<ul style="list-style-type: none"> • 18 with 600 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
		HD	250	50	<ul style="list-style-type: none"> • 18 with 600 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
21G...E355	8	LD	400	50	<ul style="list-style-type: none"> • 18 with 601...800 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
		ND	350	50	<ul style="list-style-type: none"> • 18 with 601...700 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
		HD	300	50	<ul style="list-style-type: none"> • 18 with 600 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
21G...E395	8	LD	450	50	<ul style="list-style-type: none"> • 30 with 601...900 A Class L fuse • 30 with 1000 A CB 	<ul style="list-style-type: none"> • 100 with 800 A max Class L fuse 	<ul style="list-style-type: none"> • 30 with 800 A Class L fuse
		ND	400	50	<ul style="list-style-type: none"> • 18 with 601...800 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
		HD	350	50	<ul style="list-style-type: none"> • 18 with 601...700 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
21G...E435	8	LD	500	50	<ul style="list-style-type: none"> • 30 with 601...1000 A Class L fuse • 30 with 1000 A CB 	<ul style="list-style-type: none"> • 100 with 800 A max Class L fuse 	<ul style="list-style-type: none"> • 30 with 800 A Class L fuse
		ND	450	50	<ul style="list-style-type: none"> • 30 with 601...900 A Class L fuse • 30 with 1000 A CB 	<ul style="list-style-type: none"> • 100 with 800 A max Class L fuse 	<ul style="list-style-type: none"> • 30 with 800 A Class L fuse
		HD	350	50	<ul style="list-style-type: none"> • 18 with 601...700 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
21G...E460	8	LD	500	35	<ul style="list-style-type: none"> • 30 with 601...1000 A Class L fuse • 30 with 1000 A CB 	<ul style="list-style-type: none"> • 100 with 800 A max Class L fuse 	<ul style="list-style-type: none"> • 30 with 800 A Class L fuse
		ND	500	50	<ul style="list-style-type: none"> • 30 with 601...1000 A Class L fuse • 30 with 1000 A CB 	<ul style="list-style-type: none"> • 100 with 800 A max Class L fuse 	<ul style="list-style-type: none"> • 30 with 800 A Class L fuse
		HD	400	50	<ul style="list-style-type: none"> • 18 with 601...800 A Class L fuse • 18 with 500 A CB • 100 with 600 A Class J fuse 	25	<ul style="list-style-type: none"> • 25 with 600 A Class J fuse
21G...E510	8	LD	550	35	<ul style="list-style-type: none"> • 30 with 601...1100 A Class L fuse • 30 with 1100 A CB 	<ul style="list-style-type: none"> • 100 with 800 A max Class L fuse 	<ul style="list-style-type: none"> • 30 with 800 A Class L fuse
		ND	500	35	<ul style="list-style-type: none"> • 30 with 601...1000 A Class L fuse • 30 with 1000 A CB 	<ul style="list-style-type: none"> • 100 with 800 A max Class L fuse 	<ul style="list-style-type: none"> • 30 with 800 A Class L fuse
		HD	450	50	<ul style="list-style-type: none"> • 30 with 601...900 A Class L fuse • 30 with 1000 A CB 	<ul style="list-style-type: none"> • 100 with 800 A max Class L fuse 	<ul style="list-style-type: none"> • 30 with 800 A Class L fuse
21G...E595	9	LD	700	50			
		ND	600	50			
		HD	500	50			

600V AC Input (Continued)

Drive Cat. No.	Frame	Duty Cycle	Hp	Short Circuit Current Rating (kA)			
				Circuit Breaker Only (P3) ⁽¹⁾	Circuit Breaker with Input Contactor (P3 with P11) ⁽¹⁾	Molded Case Switch Only (P5) ⁽²⁾	Molded Case Switch with Input Contactor (P5 with P11) ⁽²⁾
21G...E630	9	LD	800	50			
		ND	700	50			
		HD	600	50			
21G...E760	9	LD	900	50			
		ND	800	50			
		HD	700	50			
21G...E825	9	LD	950	50			
		ND	900	50			
		HD	750	50			
21G...E900	9	LD	1000	65			
		ND	950	50			
		HD	800	50			
21G...E980	9	LD	1100	65			
		ND	1000	65			
		HD	900	50			
21G...E1K1	10	LD	1220	N/A			
		ND	1100	N/A			
		HD	1000	N/A			
21G...E1K4	10	LD	1500	N/A			
		ND	1400	N/A			
		HD	1250	N/A			

(1) These circuit breakers are considered branch circuit protection for the unit if the tap is within 10 ft of the breaker input.

(2) These switches are 21G, SCCR ratings, with no additional protection provided. Branch circuit protection (fuse) is required based on NEC guidelines for options with P5.

690V AC Input

Drive Cat. No.	Frame	Duty Cycle	kW	Short Circuit Current Rating (kA)			
				Circuit Breaker Only (P3) ⁽¹⁾	Circuit Breaker with Input Contactor (P3 with P11) ⁽¹⁾	Molded Case Switch Only (P5) ⁽²⁾	Molded Case Switch with Input Contactor (P5 with P11) ⁽²⁾
21G...F265	8	LD	315	30	SCCR rating for 690V input contactor not available at time of publication.	SCCR rating for 690V input contactor not available at time of publication.	25
		ND	250	30			25
		HD	200	30			25
21G...F330	8	LD	355	30			
		ND	315	30			25
		HD	250	30			25
21G...F370	8	LD	400	30			
		ND	355	30			25
		HD	300	30			25
21G...F415	8	LD	450	30			
		ND	400	30			25
		HD	355	30			25
21G...F460	8	LD	500	25			
		ND	450	30			25
		HD	375	30			25
21G...F500	8	LD	530	25			
		ND	500	25			25
		HD	400	30			25

690V AC Input (Continued)

Drive Cat. No.	Frame	Duty Cycle	kW	Short Circuit Current Rating (kA)			
				Circuit Breaker Only (P3) ⁽¹⁾	Circuit Breaker with Input Contactor (P3 with P11) ⁽¹⁾	Molded Case Switch Only (P5) ⁽²⁾	Molded Case Switch with Input Contactor (P5 with P11) ⁽²⁾
21G...F590	9	LD	630	35			
		ND	560	35			
		HD	450	35			
21G...F650	9	LD	710	35			
		ND	630	35			
		HD	500	35			
21G...F710	9	LD	800	35			
		ND	710	35			
		HD	560	35			
21G...F765	9	LD	850	35			
		ND	750	35			
		HD	630	35			
21G...F795	9	LD	900	35			
		ND	800	35			
		HD	710	35			
21G...F960	9	LD	1000	35			
		ND	900	35			
		HD	800	35			
21G...F1K0	10	LD	1100	N/A			
		ND	1000	N/A			
		HD	900	N/A			
21G...F1K4	10	LD	1500	N/A			
		ND	1400	N/A			
		HD	1120	N/A			

(1) These circuit breakers are considered branch circuit protection for the unit if the tap is within 10 ft of the breaker input.

(2) These switches are 21G, SCCR ratings, with no additional protection provided. Branch circuit protection (fuse) is required based on NEC guidelines for options with P5.

Cable Considerations

This section provides information for cable types and routing.

Power Cable Types Acceptable for 200...600 Volt Installations

Various cable types are acceptable for drive installations. For an in-depth discussion of cable types, including a table of maximum motor cable lengths, see the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication [DRIVES-IN001](#).

Recommended Cable Design

Rating/Type	Description
600V 75 °C (167 °F)	<ul style="list-style-type: none"> Four tinned copper conductors with XLPE insulation. Copper braid/aluminum foil combination shield and tinned copper drain wire. PVC jacket.

Wiring Considerations

This section provides information for power, signal, and I/O wiring.

Type	Wire Types	Description	Min Insulation Rating	
Power (1) (2)	Standard	–	600V, 75 °C (167 °F)	
	Standard analog I/O	–	0.750 mm ² (18 AWG), twisted pair, 100% shield with drain.	
Signal (1) (3) (4)	Remote pot	–	0.750 mm ² (18 AWG), 3 conductor, shielded.	
	Encoder/ Pulse I/O < 30 m (100 ft)	Combined	0.196 mm ² (24 AWG) individually shielded pairs.	300V, 75...90 °C (167...194 °F)
		Signal	0.196 mm ² (24 AWG) individually shielded pairs.	
		Power	0.750 mm ² (18 AWG) individually shielded pairs	
	Encoder/ Pulse I/O 30...152 m (100...500 ft)	Combined	0.330 mm ² (22 AWG), power is 0.500 mm ² (20 AWG) individually shielded pairs.	
		Signal	0.196 mm ² (24 AWG) individually shielded pairs.	
		Power	0.750 mm ² (18 AWG) individually shielded pairs.	
	Encoder/ Pulse I/O 152...259 m (500...850 ft)	Combined	0.750 mm ² (18 AWG) individually shielded pairs.	
Signal		0.196 mm ² (24 AWG) individually shielded pairs.		
Power		0.750 mm ² (18 AWG) individually shielded pairs.		
Digital I/O Safety inputs Homing inputs (1) (3) (4)	Unshielded	–	Per US NEC or applicable national or local code.	
	Shielded	Multi-conductor shielded cable	0.750 mm ² (18 AWG), 3 conductor, shielded. 300V, 60 °C (140 °F)	

- (1) Separate control and signal wires from power wires by at least 0.3 m (1 ft).
- (2) The use of shielded wire for AC input power is not always necessary, but is recommended.
- (3) If the wires are short and contained within a cabinet that has no sensitive circuits, the use of shielded wire is not always necessary, but is recommended.
- (4) I/O terminals that are labeled (–) or common are not referenced to earth ground and are designed to reduce common mode interference. Grounding these terminals can cause signal noise. For CE installations, 115V I/O must use shielded cable or have a cable length less than 30 m (98 ft).

Power Wiring Options

This section describes the cabling options available for each Frame 8...10 drive enclosure. See pages [87...112](#) for conduit plate dimensions.

Adequate Spacing
Available conduit plates provide adequate spacing for typical cabling.

0
Possible – Evaluation is Required
Available conduit plates must be evaluated to determine if cabling fits.

X
Not Possible – Insufficient Spacing
Conduit plates are not available for the specified configuration.

Cable Entry and Exit Routes

Frame	Enclosure Rating	Enclosure Code	Cabinet Layout	Top Entry/ Top Exit	Top Entry/ Bottom Exit	Bottom Entry/ Top Exit	Bottom Entry/ Bottom Exit
8	IP20, NEMA/UL Type 1	B	600 mm drive cabinet	X		X	0
		L, P, W	800 mm drive cabinet	0		0	
		B	600 mm drive with power option bay			X	0
		L, P, W	800 mm drive with power option bay			0	
		B	600 mm drive with wiring bay				
		L, P, W	800 mm drive with wiring bay				
		B	600 mm drive with power option and wiring bays				
		L, P, W	800 mm drive with power option bay and wiring bays				
	IP54, NEMA 12	J, K, Y	800 mm drive cabinet	X	X	X	
		J, K, Y	800 mm drive with power option bay	X		0	0
		J, K, Y	800 mm drive with wiring bay				
		J, K, Y	800 mm drive with power option bay and wiring bays				
9	IP20, NEMA/UL Type 1	B	600 mm drive cabinet	0		0	0
		L, P, W	800 mm drive cabinet				
		B	600 mm drive with power option bay			X	
		L, P, W	800 mm drive with power option bay			0	
		B	600 mm drive with wiring bay				
		L, P, W	800 mm drive with wiring bay				
		B	600 mm drive with power option and wiring bays				
		L, P, W	800 mm drive with power option bay and wiring bays				
	IP54, NEMA 12	J, K, Y	800 mm drive cabinet	X	X	X	
		J, K, Y	800 mm drive with power option bay	0		0	
		J, K, Y	800 mm drive with wiring bay				
		J, K, Y	800 mm drive with power option bay and wiring bays				
10	IP20, NEMA/UL Type 1	B	600 mm drive cabinet	0		0	0
		L, P, W	800 mm drive cabinet			0	
		B	600 mm drive with power option bay	X		X	
		L, P, W	800 mm drive with power option bay	0		0	
		B	600 mm drive with wiring bay				
		L, P, W	800 mm drive with wiring bay				
		B	600 mm drive with power option and wiring bays				
		L, P, W	800 mm drive with power option bay and wiring bays			X	
	IP54, NEMA 12	J, K, Y	800 mm drive cabinet	X	X	X	
		J, K, Y	800 mm drive with power option bay	X	0	0	
		J, K, Y	800 mm drive with wiring bay	0			
		J, K, Y	800 mm drive with power option bay and wiring bays				

Motor Considerations

Due to the operational characteristics of AC variable frequency drives, we recommend motors with inverter grade insulation systems that are designed to meet or exceed NEMA MG1 Part 31.40.4.2 standards for resistance to spikes of 1600 volts.

Guidelines must be followed when using non-inverter grade motors to avoid premature motor failures. See Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication [DRIVES-IN001](#) for recommendations.

Allen-Bradley Permanent Magnet Servo Motors

When using a PowerFlex 755 drive to control a permanent magnet motor, the motor feedback device must have a resolution such that the number of pulses per revolution (PPR) is an exponent of 2 (for example: 512, 1024, 2048, 4096, 8192, and so on).

The following table contains a list of specifications for Allen-Bradley® servo motors compatible with PowerFlex 750-Series drives. This information is provided to help configure a PowerFlex 750-Series drive with the appropriate servo motor data. For information about compatibility and configuration of Allen-Bradley servo motors (including Bulletin RDB or RDD-Series™ Direct Drive™ motors) and third-party PM motors, contact Rockwell Automation technical support.

Allen-Bradley Servo Motors Compatible with PowerFlex 750-Series Drives

Cat. No.	Motor NP Volts (line-line V rms)	Motor NP Amps (A rms)	Motor NP Hertz (Hz)	Motor NP RPM (oper. rpm)	Motor NP Power (kW)	Motor Poles	Current peak (A rms)	System Cont. Stall Torque (N·m)	Motor Max RPM
MPL-B4530K	460	7.8	200.7	3010	2.6	8	19.1	8.25	4000
MPL-B4560F	460	8.3	144.7	2170	3.2	8	25.5	14.1	3000
MPL-B520K	460	8.1	208	3120	3.5	8	23.3	10.7	4000
MPL-B540K	460	14.5	177.3	2660	5.4	8	42.4	19.4	4000
MPL-B560F	460	14.5	130.7	1960	5.5	8	42.4	26.8	3000
MPL-B580F	460	18.4	132.7	1990	7.1	8	66.5	34	3000
MPL-B580J	460	22.6	148	2220	7.9	8	66.5	34	3800
MPL-B640F	460	22.7	106	1590	6.11	8	46	36.7	3000
MPL-B660F	460	27.2	81.3	1220	6.15	8	67.9	48	3000
MPL-B680D	460	24	94	1410	9.3	8	66.5	62.8	2000
MPL-B680F	460	33.9	79.3	1190	7.5	8	67.9	60	3000
MPL-B860D	460	33.6	96	1440	12.5	8	67.5	83.1	2000
MPL-B880C	460	33.6	72.7	1090	12.6	8	69	110	1500
MPL-B880D	460	40.3	86.7	1300	15	8	113.2	110	2000
MPL-B960B	460	29.7	62	930	12.7	8	63.6	130	1200
MPL-B960C	460	38.9	76	1140	14.8	8	88.4	124.3	1500
MPL-B960D	460	50.2	76.7	1150	15	8	102.5	124.3	2000
MPL-B980B	460	31.8	59.3	890	15.02	8	70.7	162.7	1000
MPL-B980C	460	48.2	67.3	1010	16.8	8	99	158.2	1500
MPL-B980D	460	63.6	74.7	1120	18.6	8	141.4	158.2	2000

Allen-Bradley Servo Motors Compatible with PowerFlex 750-Series Drives (Continued)

Cat. No.	Motor NP Volts (line-line V rms)	Motor NP Amps (A rms)	Motor NP Hertz (Hz)	Motor NP RPM (oper. rpm)	Motor NP Power (kW)	Motor Poles	Current peak (A rms)	System Cont. Stall Torque (N-m)	Motor Max RPM
MPM-B1151F	480	1.5	266.7	4000	0.75	8	7	2.18	5000
MPM-B1151T	480	3.1	333.3	5000	0.9	8	14.5	2.18	7000
MPM-B1152C	480	2.3	166.7	2500	1.2	8	8.8	2.18	3000
MPM-B1152F	480	2.9	266.7	4000	1.4	8	15.5	4.74	5200
MPM-B1152T	480	5.2	266.7	4000	1.4	8	26.8	4.74	7000
MPM-B1153E	480	2.7	200	3000	1.4	8	15.3	6.55	3500
MPM-B1153F	480	3.2	266.7	4000	1.45	8	22.6	6.55	5500
MPM-B1153T	480	5.5	266.7	4000	1.45	8	39.2	6.55	7000
MPM-B1302F	480	3.4	266.7	4000	1.65	8	15.6	5.99	4500
MPM-B1302M	480	4.9	266.7	4000	1.65	8	22.6	5.99	6000
MPM-B1302T	480	6.6	266.7	4000	1.65	8	30.7	5.99	7000
MPM-B1304C	480	3.4	183.3	2750	2	8	15.8	10.2	2750
MPM-B1304E	480	4.1	166.7	2500	2.2	8	24.2	10.2	4000
MPM-B1304M	480	7.3	233.3	3500	2.2	8	42.9	10.2	6000
MPM-B1651C	480	4.7	200	3000	2.5	8	20.6	10.7	3500
MPM-B1651F	480	8.2	200	3000	2.5	8	36	10.7	5000
MPM-B1651M	480	10.9	200	3000	2.5	8	40.2	10.7	5000
MPM-B1652C	480	7	166.7	2500	3.8	8	23.8	16	2500
MPM-B1652E	480	8	233.3	3500	4.3	8	42.8	19.4	3500
MPM-B1652F	480	11	233.3	3500	4.3	8	59.5	19.4	4500
MPM-B1653C	480	10.5	133.3	2000	4.6	8	41.9	26.8	2500
MPM-B1653E	480	10.2	200	3000	5.1	8	51.6	26.8	3500
MPM-B1653F	480	13.2	200	3000	5.1	8	66.7	26.8	4000
MPM-B2152C	480	12.3	133.3	2000	5.6	8	39.2	36.7	2500
MPM-B2152F	480	18.7	166.7	2500	5.9	8	69.3	33	4500
MPM-B2152M	480	21	166.7	2500	5.9	8	54	30	5000
MPM-B2153B	480	12.7	116.7	1750	6.8	8	42.4	48	2000
MPM-B2153E	480	19.3	133.3	2000	7.2	8	69.7	48	3000
MPM-B2153F	480	22.1	133.3	2000	7.2	8	69.6	45	3800
MPM-B2154B	480	13.9	116.7	1750	6.9	8	69.3	62.8	2000
MPM-B2154e	480	18.3	133.3	2000	7.5	8	69.5	56	3000
MPM-B2154F	480	19.8	133.3	2000	7.5	8	59.3	56	3300

For motor power and feedback cable information, see the Kinetix® Motion Control Selection Guide, (publication [GMC-SG001](#)).

Dimensions and Weights

This section provides Frame and rating cross-references.

400V AC and 480V AC

Cat. No.	Light Duty kW Output	Normal Duty kW Output	Heavy Duty kW Output	Cat. No.	Light Duty Hp Output	Normal Duty Hp Output	Heavy Duty Hp Output	Enclosure Code/Frame Size					
								B, J, L, T	F	G	N	K, P, W, Y	R
400 Volt				480 Volt									
20x...C2P1	–	0.75	0.75	20x...D2P1	–	1	1	–	2	2	2	–	1
20x...C3P5	–	1.5	1.5	20x...D3P4	–	2	2						
20x...C5P0	–	2.2	2.2	20x...D5P0	–	3	3						
20x...C8P7	–	4	4	20x...D8P0	–	5	5						
20x...C011	–	5.5	5.5	20x...D011	–	7.5	7.5						
20x...C015	–	7.5	5.5	20x...D014	–	10	7.5						
20x...C022	–	11	7.5	20x...D022	–	15	10						
20x...C030	–	15	11	20x...D027	–	20	15						
20x...C037	–	18.5	15	20x...D034	–	25	20						
20x...C043	–	22	18.5	20x...D040	–	30	25						
20x...C060	–	30	22	20x...D052	–	40	30						
20x...C072	–	37	30	20x...D065	–	50	40						
20x...C085	–	45	37	20x...D077	–	60	50						
20x...C104	–	55	45	20x...D096	–	75	60						
20x...C140	–	75	55	20x...D125	–	100	75						
20x...C170	–	90	75	20x...D156	–	125	100						
20x...C205	–	110	90	20x...D186	–	150	125						
20x...C260	–	132	110	20x...D248	–	200	150						
20x...C302	–	160	132	20x...D302	–	250	200						
20x...C367	–	200	160	20x...D361	–	300	250						
20x...C456	–	250	200	20x...D415	–	350	300						
2xG...C460	315	250	200	20x...D430	400	350	300	8	–	–	–	8	–
2xG...C477	–	270	200	20x...D477	–	400	300	–	(1)	–	7	–	–
2xG...C540	315	315	250	20x...D485	450	400	350	8	–	–	–	8	–
2xG...C567	355	315	250	20x...D545	500	450	350						
2xG...C650	400	355	315	20x...D617	600	500	400						
2xG...C750	450	400	355	20x...D710	650	600	450						
2xG...C770	450	400	355	20x...D740	700	650	500						
2xG...C910	560	500	400	20x...D800	800	700	600						
2xG...C1K0	630	560	500	20x...D960	900	800	700	9	–	–	–	9	–
2xG...C1K1	710	630	500	20x...D1K0	1000	900	750						
2xG...C1K2	800	710	560	20x...D1K2	1100	1000	800						
2xG...C1K4	850	800	630	20x...D1K3	1250	1100	900						
2xG...C1K5	900	850	710	20x...D1K4	1350	1250	1000						
2xG...C1K6	1000	900	710	20x...D1K5	1500	1350	1100						
2xG...C2K1	1400	1250	1000	20x...D2K0	2000	1750	1650	10	–	–	–	10	–

(1) For Frames 6 and 7, a user-installed flange kit (catalog number 20-750-FLNG4-Fx) is available to convert a code N drive that provides a NEMA/UL Type 4X/12 back.

600V AC and 690V AC

Cat. No.	Light Duty kW Output	Normal Duty kW Output	Heavy Duty kW Output	Cat. No.	Light Duty Hp Output	Normal Duty Hp Output	Heavy Duty Hp Output	Enclosure Code/Frame Size						
								B, J, L, T	F		G, N		K, P, W, Y	R
									690V	600V	690V	600V		
690 Volt				600 Volt										
				20x...E1P7	–	1	0.5							
				20x...E2P7	–	2	1							
				20x...E3P9	–	3	2			3	–	3		
				20x...E6P1	–	5	3							
				20x...E9P0	–	7.5	5							
				20x...E011	–	10	7.5							
20x...F012	–	7.5	5.5	20x...E012	–	10	7.5			–	6	6		
				20x...E017	–	15	10			3	–	3		
20x...F015	–	11	7.5	20x...E018	–	15	10			–	6	6		
				20x...E022	–	20	15			3	–	3		
20x...F020	–	15	11	20x...E023	–	20	15			–	6	6		
20x...F023	–	18.5	15	20x...E024	–	20	20			–	6	6		
				20x...E027	–	25	20			4	–	4		
20x...F030	–	22	18.5	20x...E028	–	25	20			–	6	6		
				20x...E032	–	30	25			4	–	4		
20x...F034	–	30	22	20x...E033	–	30	25			–	6	6		
				20x...E041	–	40	30			5	–	5		
20x...F046	–	37	30	20x...E042	–	40	30			–	6	6		
				20x...E052	–	50	40			5	–	5		
20x...F050	–	45	37	20x...E053	–	50	40							
20x...F061	–	55	45	20x...E063	–	60	50							
20x...F082	–	75	55	20x...E077	–	75	60							
20x...F098	–	90	75	20x...E099	–	100	75							
20x...F119	–	110	90	20x...E125	–	125	100							
20x...F142	–	132	110	20x...E144	–	150	125							
20x...F171	–	160	132	20x...E192	–	200	150							
20x...F212	–	200	160	20x...E242	–	250	200							
20x...F263	–	250	200	20x...E289	–	300	250							
2xG...F265	315	250	200	20x...E295	350	300	250							
2xG...F330	355	315	250	20x...E355	400	350	300							
2xG...F370	400	355	300	20x...E395	450	400	350							
2xG...F415	450	400	355	20x...E435	500	450	350							
2xG...F460	500	450	375	20x...E460	500	500	400							
2xG...F500	530	500	400	20x...E510	550	500	450							
2xG...F590	630	560	450	20x...E595	700	600	500							
2xG...F650	710	630	500	20x...E630	800	700	600							
2xG...F710	800	710	560	20x...E760	900	800	700							
2xG...F765	850	750	630	20x...E825	950	900	750							
2xG...F795	900	800	710	20x...E900	1000	950	800							
2xG...F960	1000	900	800	20x...E980	1100	1000	900							
2xG...F1K0	1100	1000	900	20x...E1K1	1200	1100	1000							
2xG...F1K4	1500	1400	1120	20x...E1K4	1500	1400	1250							

Enclosure Options

IMPORTANT IP00, IP20, and NEMA/UL Open Type PowerFlex 750-Series drives must be mounted in a clean, dry location. Contaminants such as oils, corrosive vapors, and abrasive debris must be kept out of the enclosure. These enclosures are intended for indoor use primarily to provide a degree of protection against contact with enclosed equipment. These enclosures offer no protection against airborne contaminants. See the following tables for an explanation of enclosure options and the environmental specifications that are found on [page 8](#).

Pollution Degree Ratings According to EN 61800-5-1

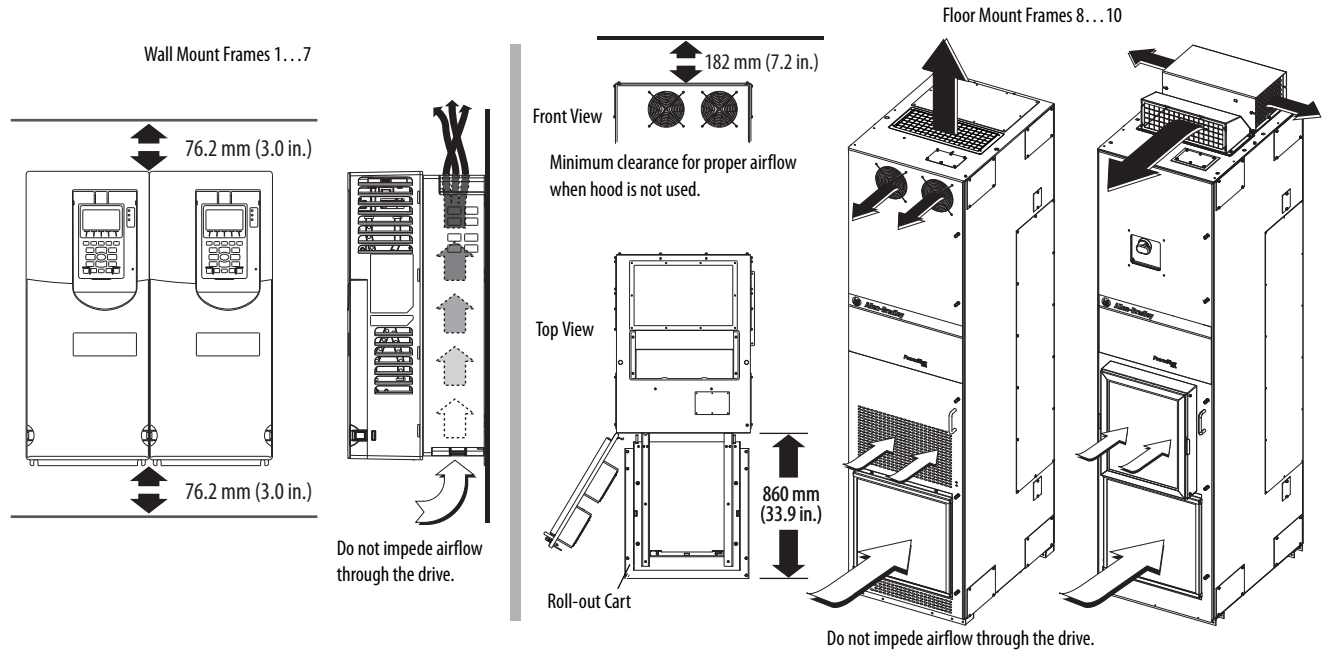
Pollution Degree	Description
1	No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.
2	Normally, only non-conductive pollution occurs. Occasionally, a temporary conductivity that is caused by condensation is to be expected, when the drive is out of operation.
3	Conductive pollution or dry non-conductive pollution occurs, which becomes conductive due to condensation, which is to be expected.
4	The pollution generates persistent conductivity that is caused, for example, by conductive dust or rain or snow.

Drive Enclosure Ratings

Frames	Enclosure Type (Cat. No. Position 6)	Installed Accessory Kit	Front Side Rating		Back Side/Heat Sink Rating	
			Enclosure Type	Pollution Degree	Enclosure Type	Pollution Degree
1	R	None	IP20, NEMA/UL Open Type	1, 2	IP20, NEMA/UL Open Type	1, 2
		NEMA Type 1	IP20, NEMA/UL Type 1	1, 2	IP20, NEMA/UL Type 1	1, 2
2...5	N	None	IP20, NEMA/UL Open Type	1, 2	IP20, NEMA/UL Open Type	1, 2
		NEMA Type 1	IP20, NEMA/UL Type 1	1, 2	IP20, NEMA/UL Type 1	1, 2
		Flange	IP20, NEMA/UL Type 1	1, 2	IP20, NEMA/UL Type 1	1, 2
	F	None	IP20, NEMA/UL Open Type	1, 2	IP66, NEMA/UL Type 4X	1, 2, 3, 4
	G	None	IP54, NEMA/UL Type 12	1, 2, 3, 4	IP54, NEMA/UL Type 12	1, 2, 3, 4
6 and 7	N	None	IP00, NEMA/UL Open Type	1, 2	IP00, NEMA/UL Open Type Kit	1, 2
		NEMA Type 1	IP20, NEMA/UL Type 1	1, 2	IP20, NEMA/UL Type 1	1, 2
		NEMA Type 4X flange	IP00, NEMA/UL Open Type	1, 2	IP66, NEMA/UL Type 4X	1, 2, 3, 4
	G	None	IP54, NEMA/UL Type 12	1, 2, 3, 4	IP54, NEMA/UL Type 12	1, 2, 3, 4
8...10	B, L, P, W	None	IP20, NEMA/UL Type 1, MCC	1, 2	IP20, NEMA/UL Type 1	1, 2
	J, K, Y	None	IP54, NEMA 12	1, 2, 3, 4	IP54, NEMA 12	1, 2, 3, 4

Minimum Mounting Clearances

Specified vertical clearance requirements are intended to be from the drive to the closest object that can restrict airflow through the drive heat sink and chassis. The drive must be mounted in a vertical orientation as shown and must make full contact with the mounting surface. Do not use standoffs or spacers. In addition, inlet air temperature must not exceed the product specification.



Approximate Weights

Drive	Frame Size	Drive Rating		Enclosure Code/Weight, kg (lb)				
		kW (400V, 690V)	Hp (480V, 600V)	F	G	N	R	
Standard (20F, 20G)	AC input and common DC input	1	0.75...7.5	1...10				7 (15)
		2	0.75...11	1...15	9 (20)	10 (22)	8 (18)	
		3	15...22	0.5...30	13 (29)	14 (31)	11 (25)	
		4	30...37	20...50	17 (37)	18 (39)	16 (35)	
		5	45...55	30...70	24 (54)	26 (57)	24 (52)	
			45...75	7.5...100	37 (82)	89 (197)	37 (82)	
		6	132...200	150...300	69 (152)	135 (297)	79 (174)	
			200...270	300...400	96 (212)	162 (357)	106 (234)	
				B, L	P, W	J	K, Y	
Standard (20G)	AC input	8	250...400	350...650	623 (1374)	1145 (2525)	644 (1419)	1166 (2570)
		9	500...850	700...1250	1246 (2748)	2290 (5051)	1287 (2838)	2332 (5141)
		10	900...1250	1350...1750	1869 (4122)	3435 (7576)	1931 (4257)	3498 (7711)
	Common DC input	8	250...400	350...650	566 (1248)	1088 (2400)	586 (1293)	1109 (2445)
		9	500...850	700...1250	1132 (2497)	2176 (4799)	1173 (2587)	2218 (4889)
		10	900...1250	1350...1750	1698 (3745)	3264 (7199)	1760 (3880)	3327 (7334)
With options (21G)	AC input	8	250...400	350...650	1145 (2525)	1675 (3694)	1166 (2570)	1696 (3739)
		9	500...850	700...1250	1730 (3815)	2820 (6219)	1771 (3905)	2862 (6309)
		10	900...1250	1350...1750	2315 (5106)	3965 (8745)	2377 (5241)	4028 (8880)

Maximum Component Weights - Frames 8... 10

Component	AC Input, kg (lb)	Common DC Input, kg (lb)
Converter/DC input with precharge	64 (140)	64 (140)
Inverter	222 (490)	165 (363)
Drive assembly (Open, IP00)	329 (725)	229 (504)

Approximate Dimensions

This section provides the approximate dimensions for the drives.

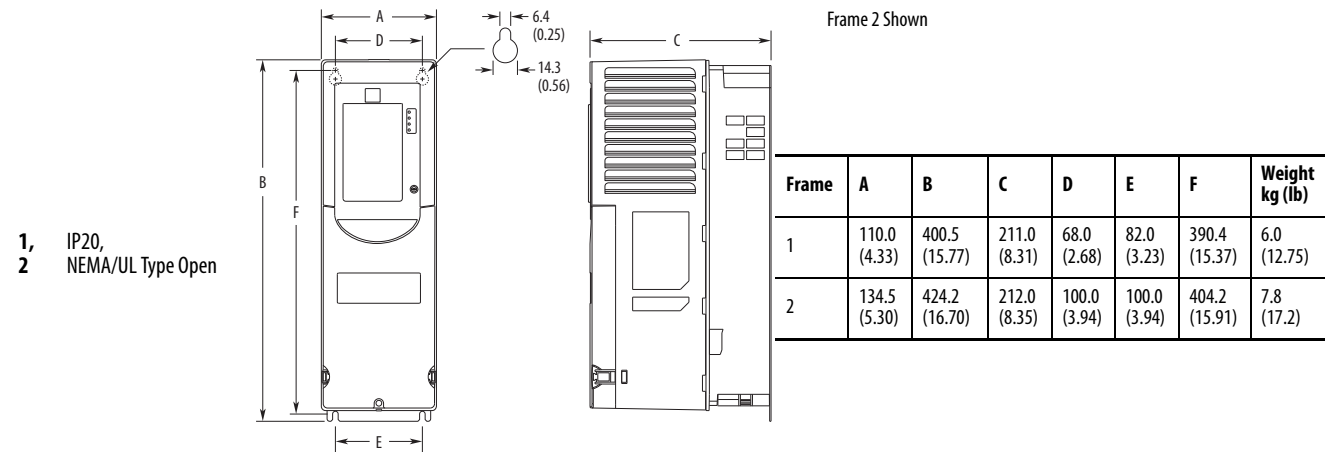
Dimension Drawing Index

Frame	Description	Page
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	MCC Style Cabinet, 600 mm (23.6 in.) Deep - IP20	87
8	MCC Style Cabinet with Wiring Bay, 600 mm (23.6 in.) Deep - IP20	88
	MCC Style Cabinet with Cabinet Option Bay, 600 mm (23.6 in.) Deep - IP20	89
	MCC Style Cabinet with Wiring Bay and Cabinet Option Bay, 600 mm (23.6 in.) Deep - IP20	90
	MCC Style Cabinet, 800 mm (31.5 in.) Deep - IP20	91
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	Open Style - DC Input	100

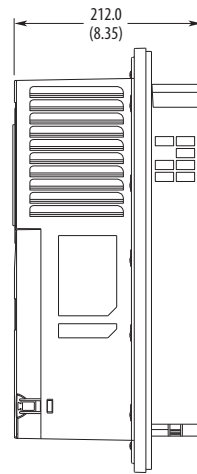
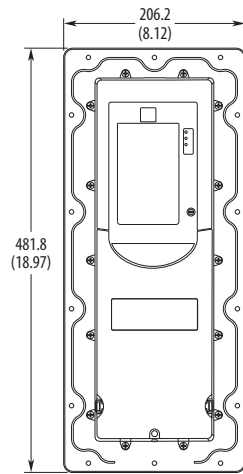
Dimension Drawing Index (Continued)

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	MCC Style Cabinet with Wiring Bay, 600 mm (23.6 in.) Deep - IP20	102
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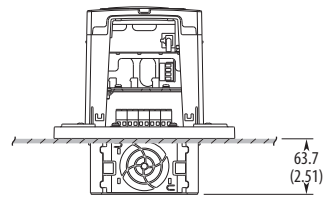
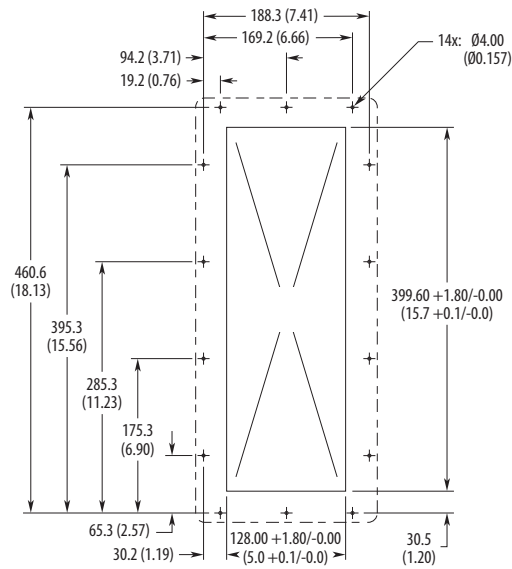
Frame Type **Approximate Dimensions – mm (in.)**



Frame	Type	Approximate Dimensions – mm (in.)
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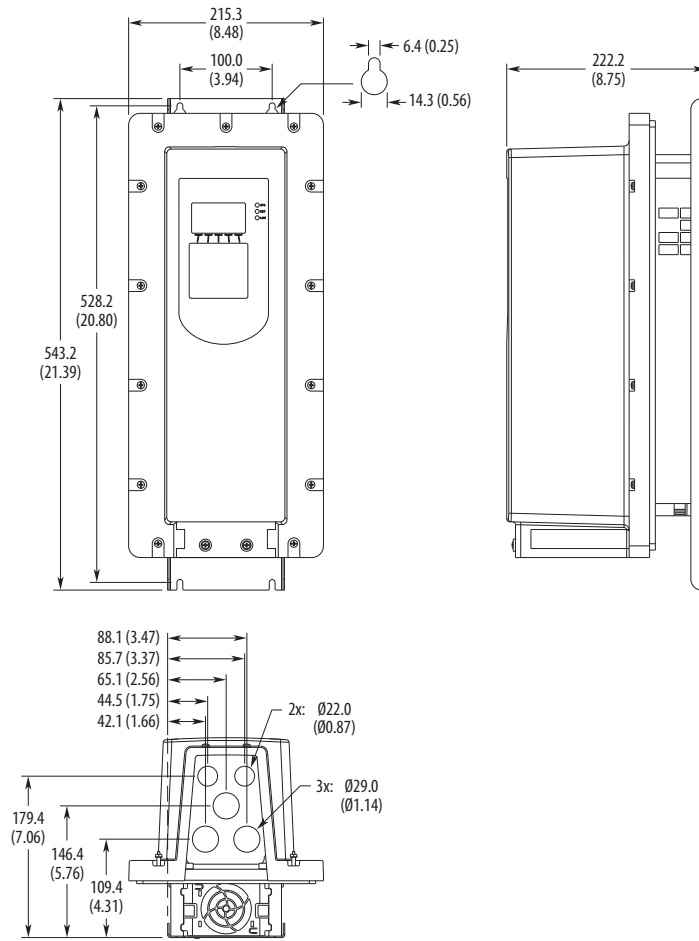
2 Flange Mount



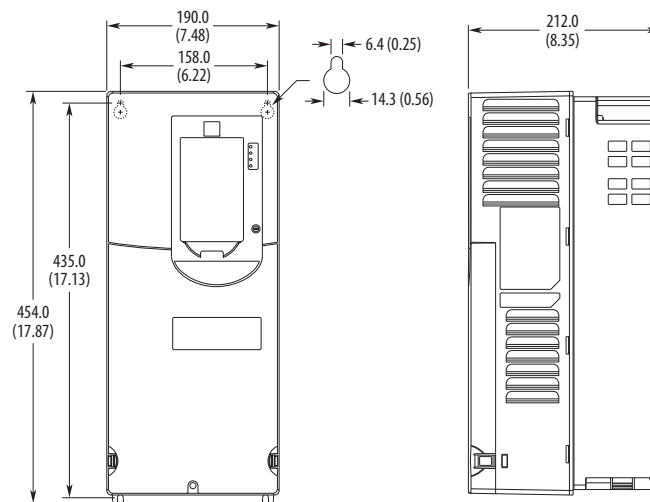
Important: Supplied mounting hardware must be used to meet enclosure rating.

Frame	Type	Approximate Dimensions – mm (in.)
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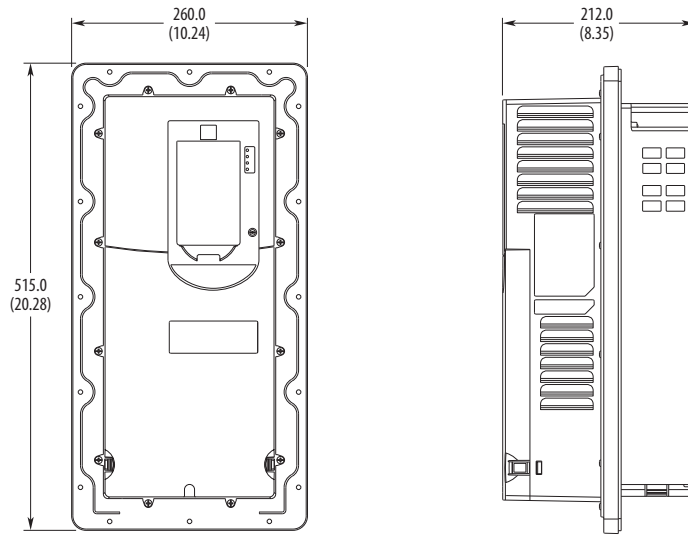
2 IP54,
NEMA/UL Type 12



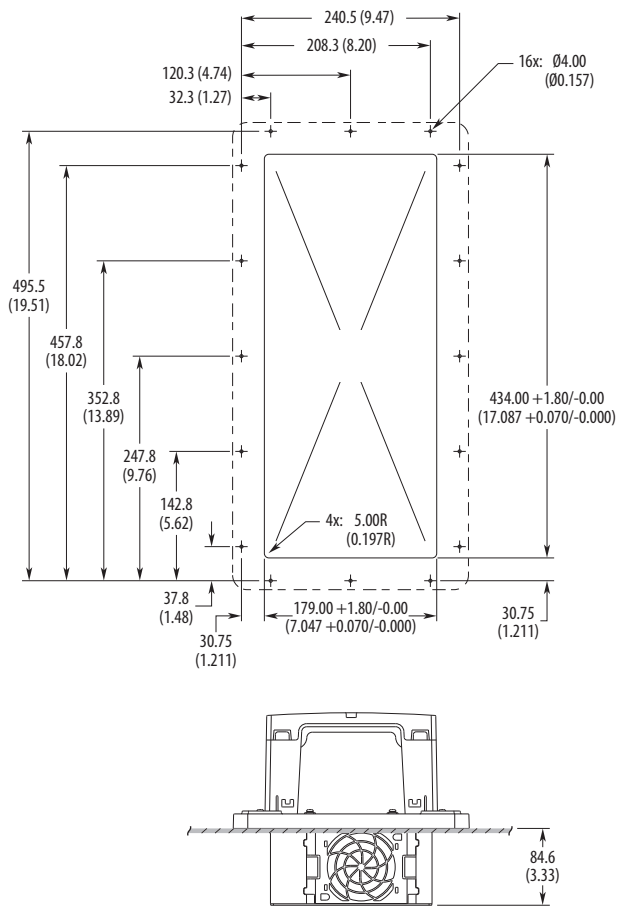
3 IP20,
NEMA/UL Open Type



Frame	Type	Approximate Dimensions – mm (in.)
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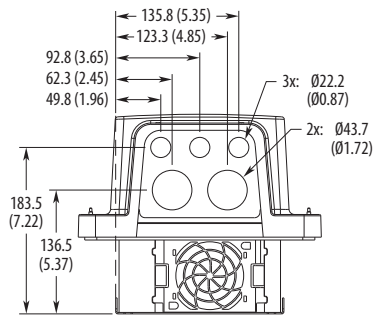
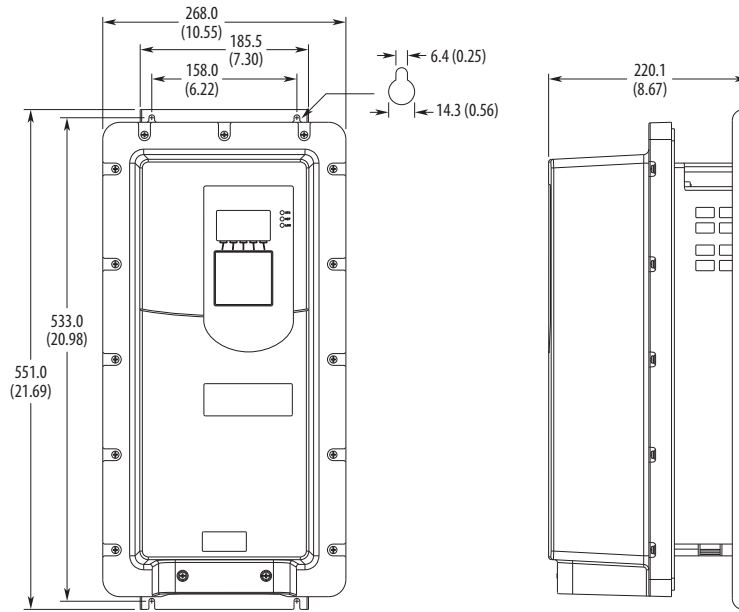
3 Flange Mount



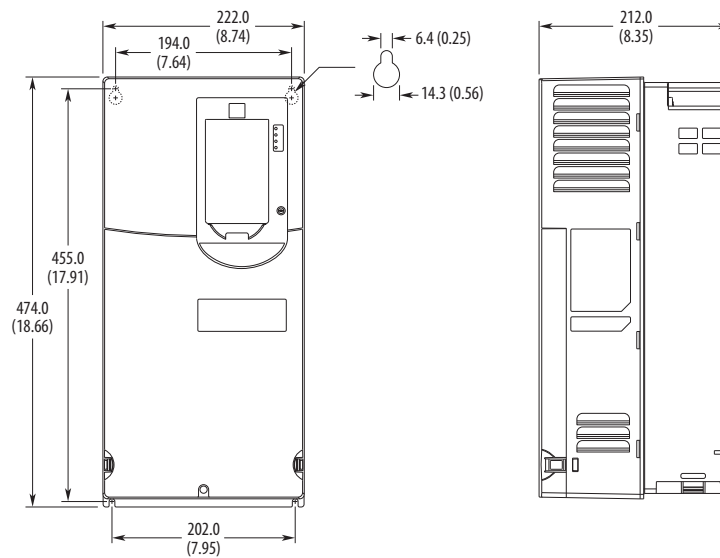
Important: Supplied mounting hardware must be used to meet enclosure rating.

Frame	Type	Approximate Dimensions – mm (in.)
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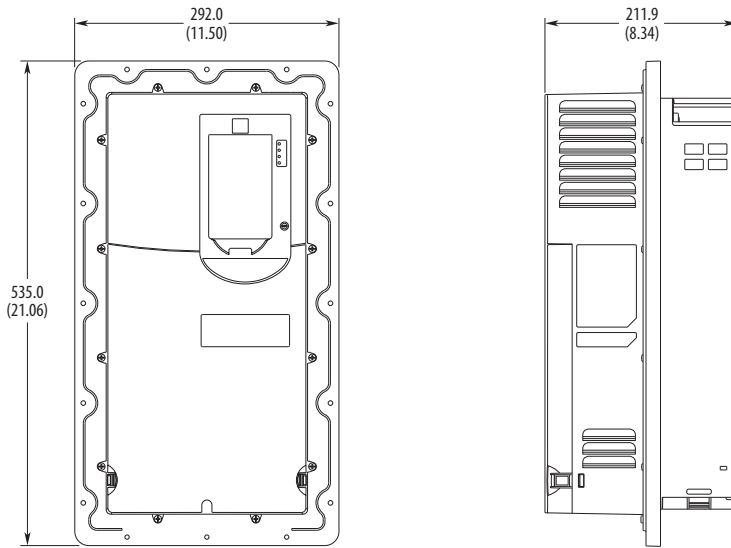
3 IP54,
NEMA/UL Type 12



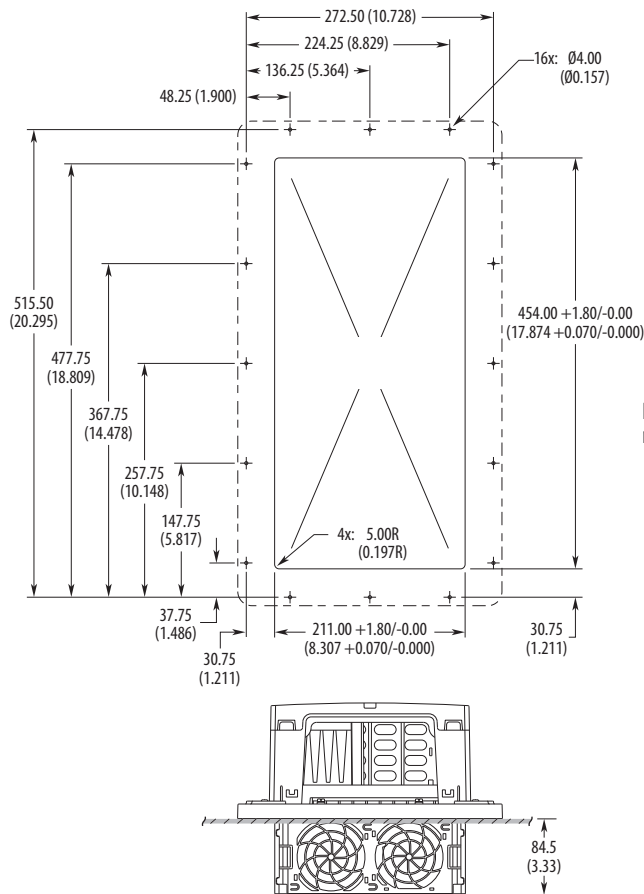
4 IP20,
NEMA/UL Open Type



Frame	Type	Approximate Dimensions – mm (in.)
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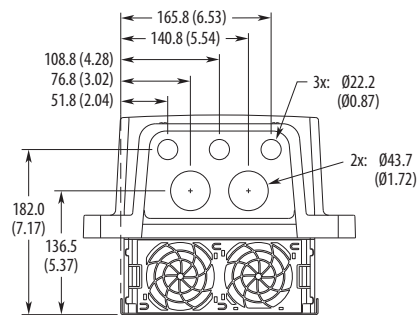
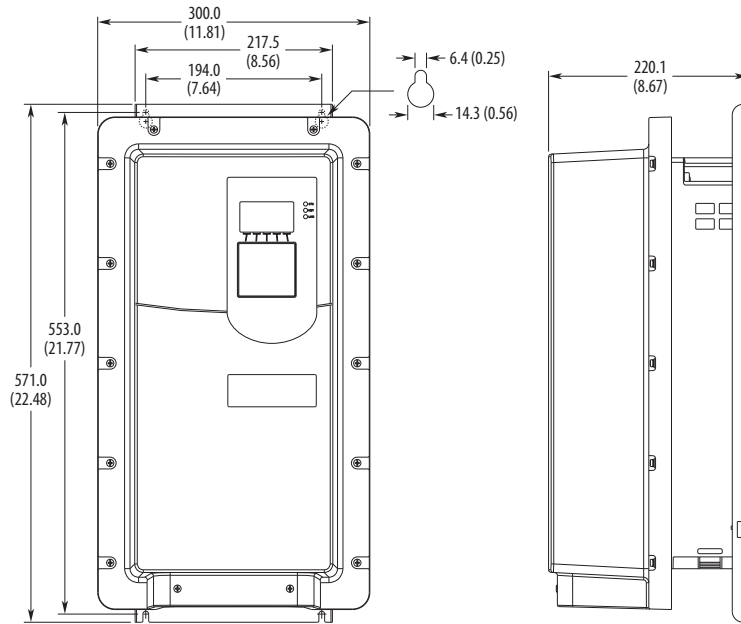
4 Flange Mount



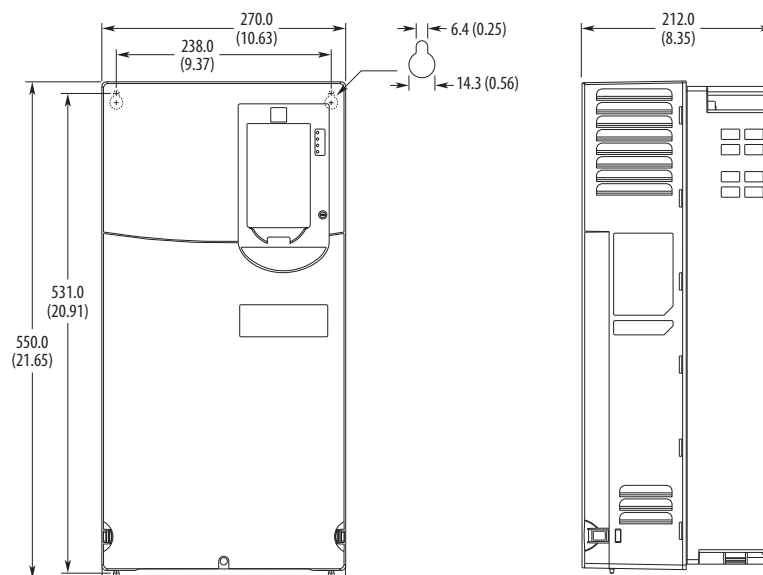
Important: Supplied mounting hardware must be used to meet enclosure rating.

Frame	Type	Approximate Dimensions – mm (in.)
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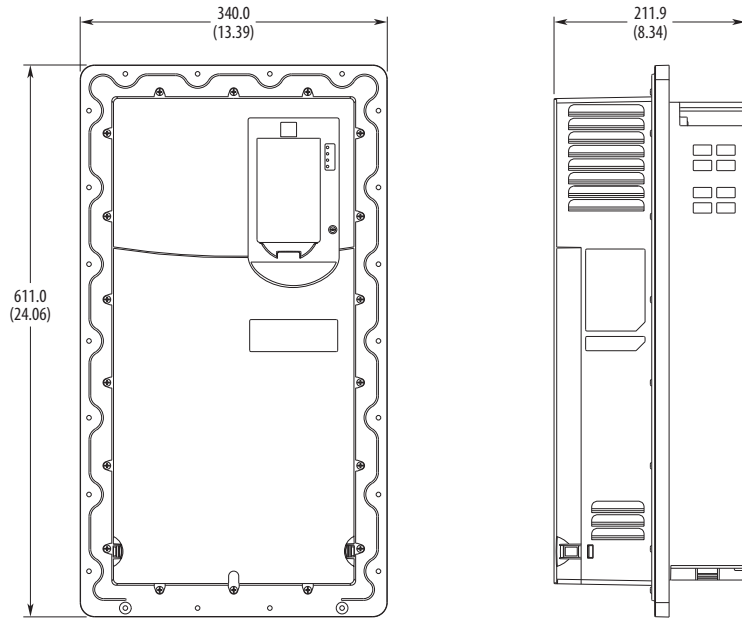
4 IP54,
NEMA/UL Type 12



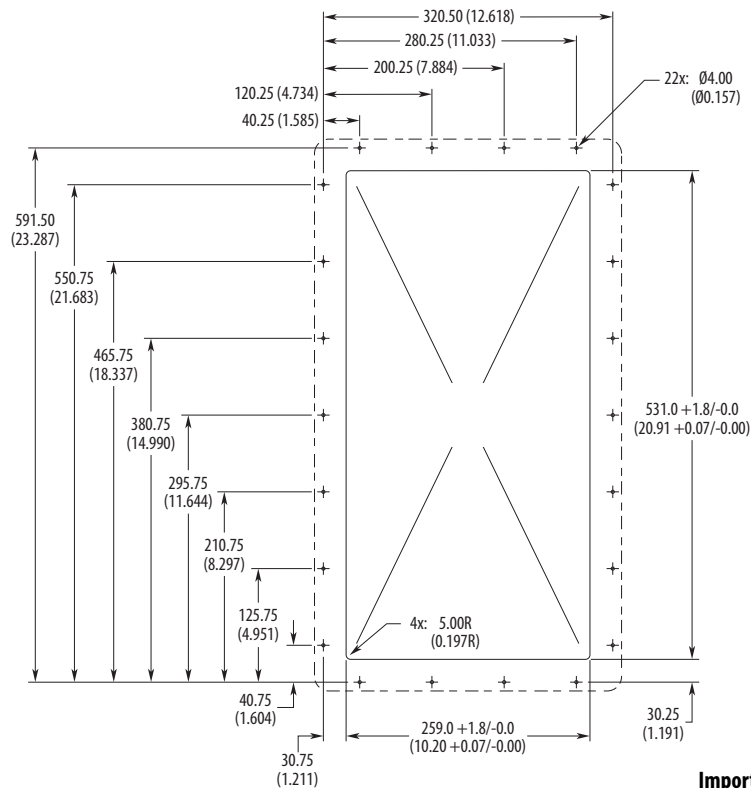
5 IP20,
NEMA/UL Open Type



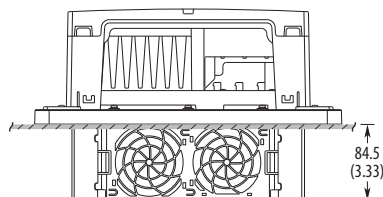
Frame	Type	Approximate Dimensions – mm (in.)
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5 Flange Mount

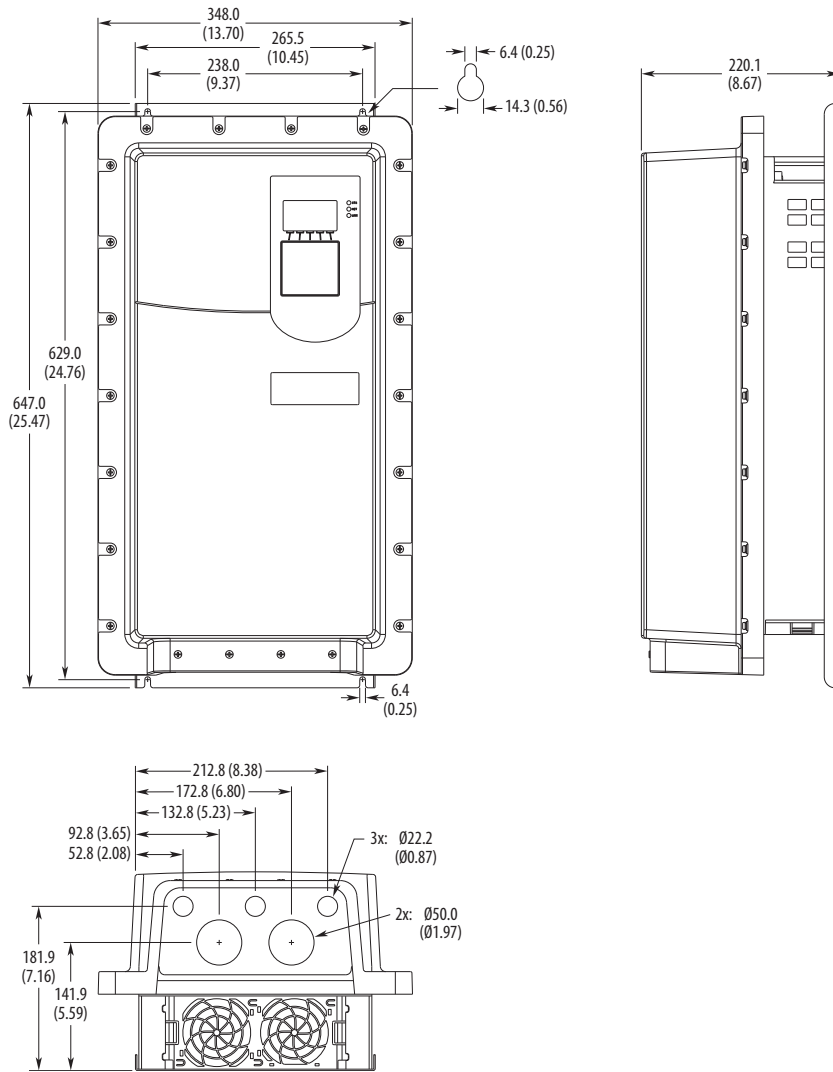


Important: Supplied mounting hardware must be used to meet enclosure rating.

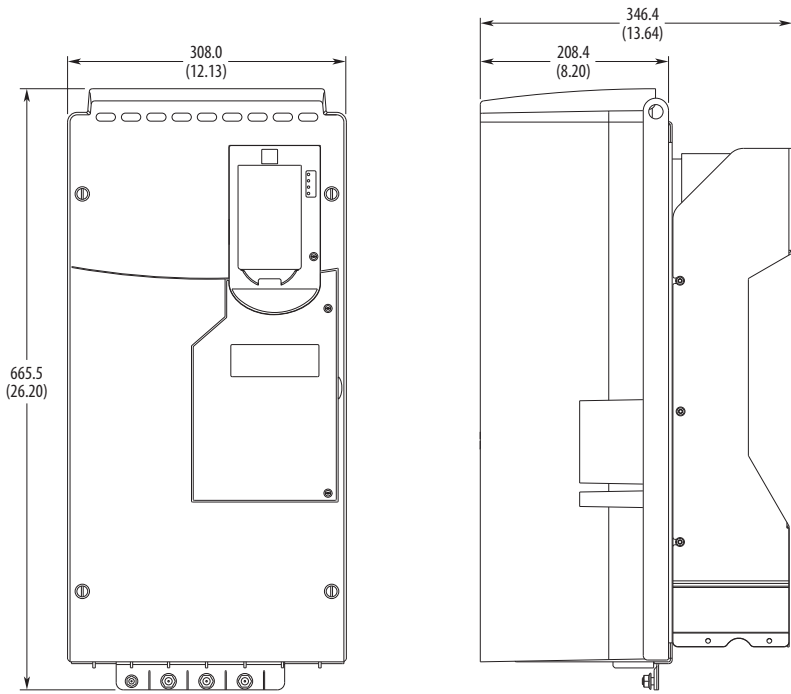


Frame	Type	Approximate Dimensions – mm (in.)
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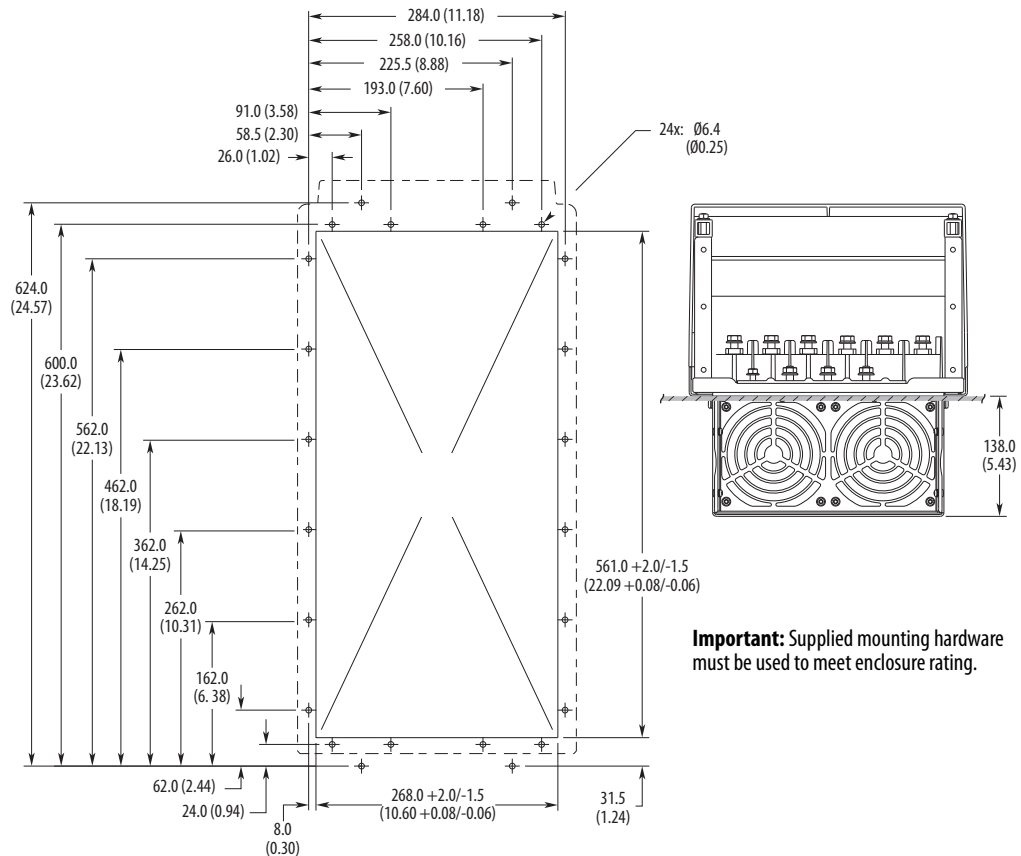
5 IP54,
NEMA/UL Type 12

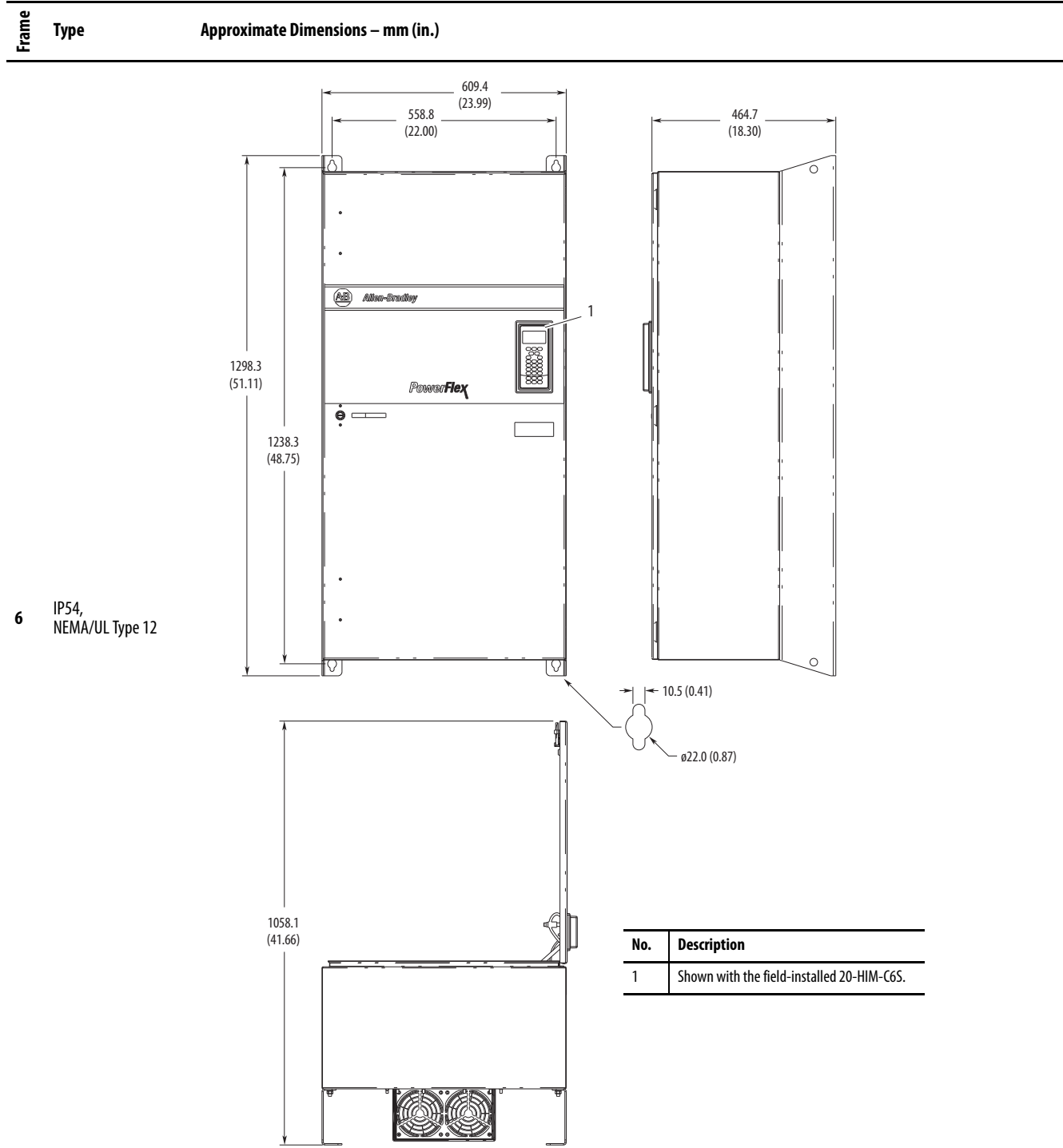


Frame	Type	Approximate Dimensions – mm (in.)
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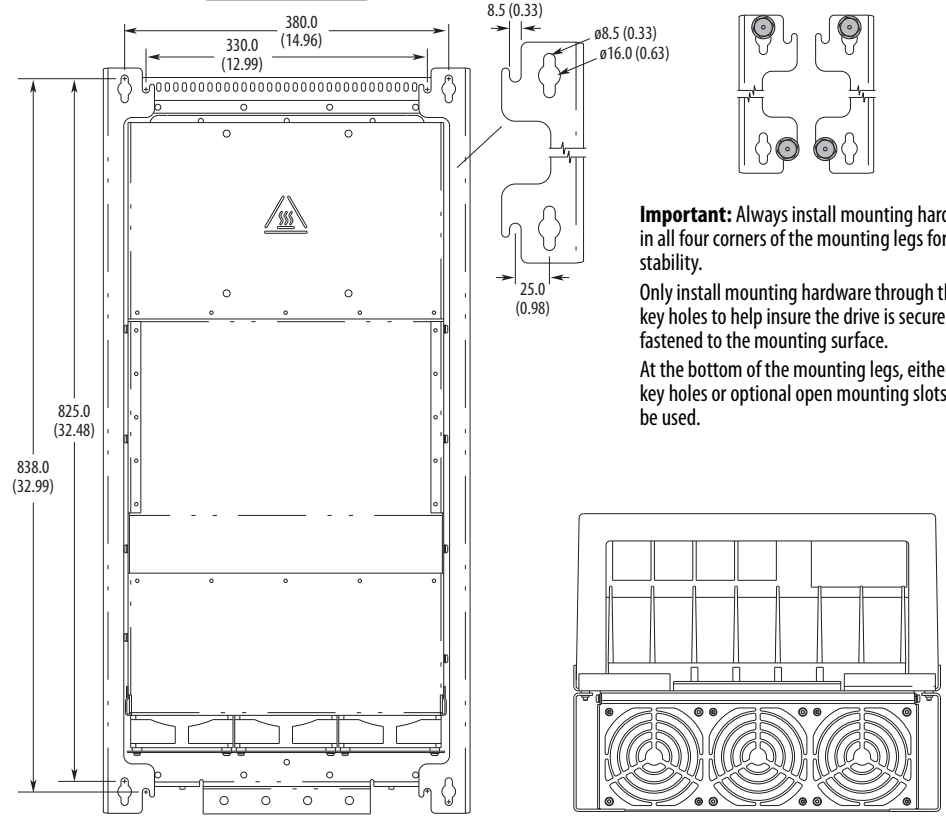
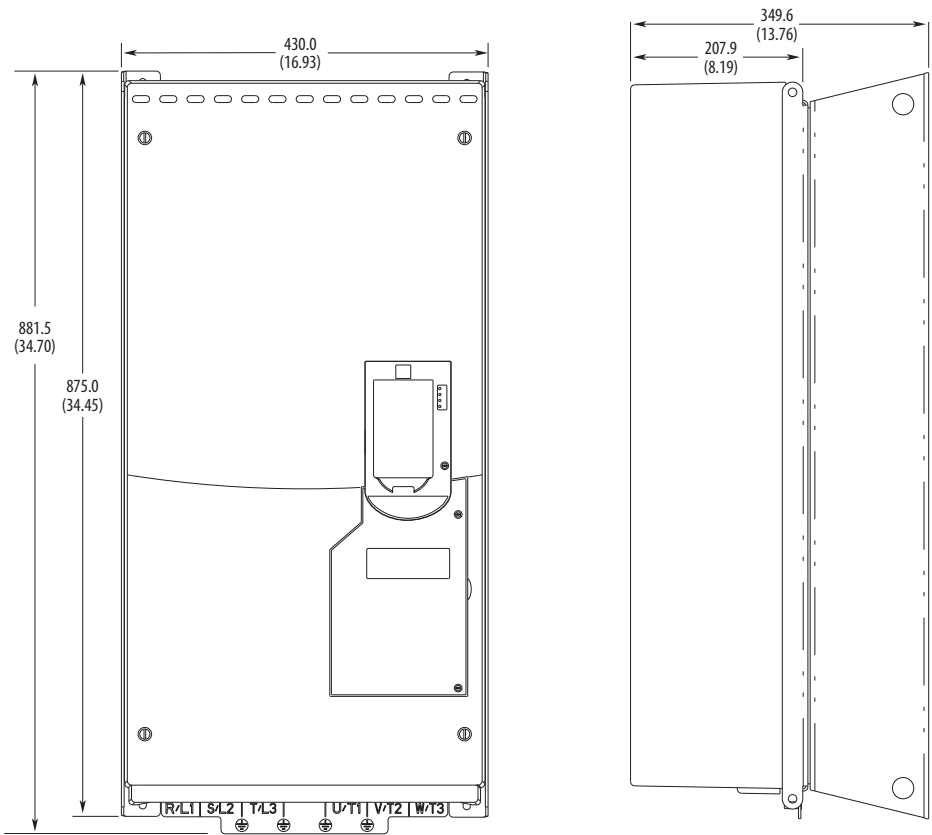
6 Flange Mount



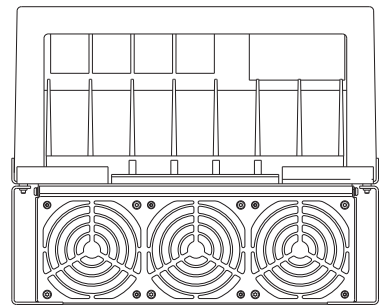


Frame	Type	Approximate Dimensions – mm (in.)
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7 IP00, NEMA/UL Open Type



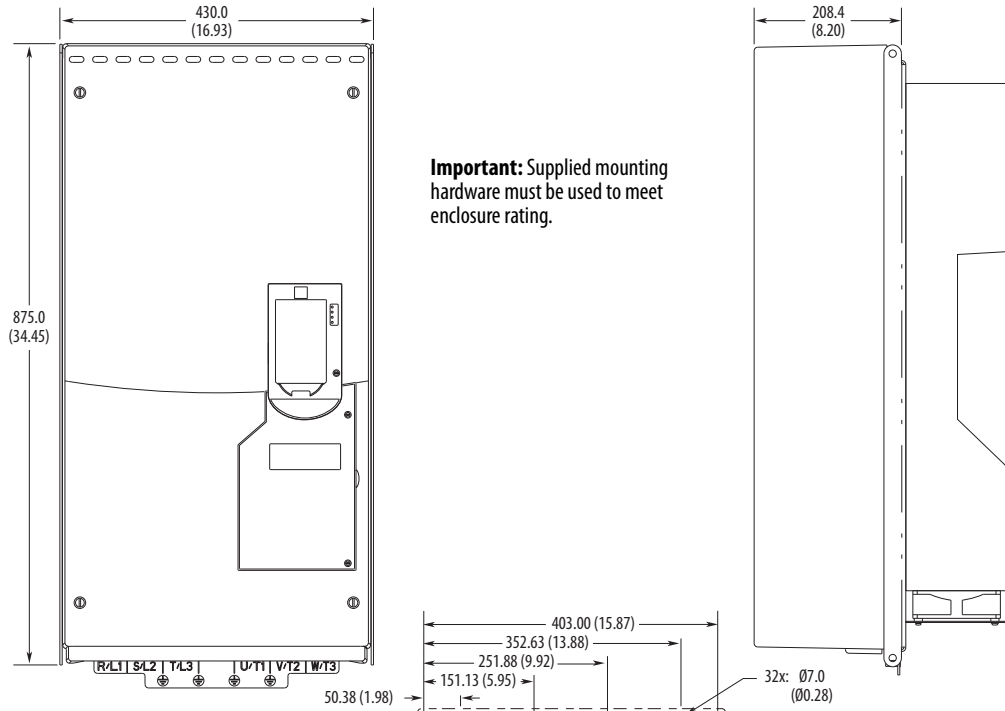
Important: Always install mounting hardware in all four corners of the mounting legs for stability.
 Only install mounting hardware through the top key holes to help insure the drive is securely fastened to the mounting surface.
 At the bottom of the mounting legs, either the key holes or optional open mounting slots can be used.



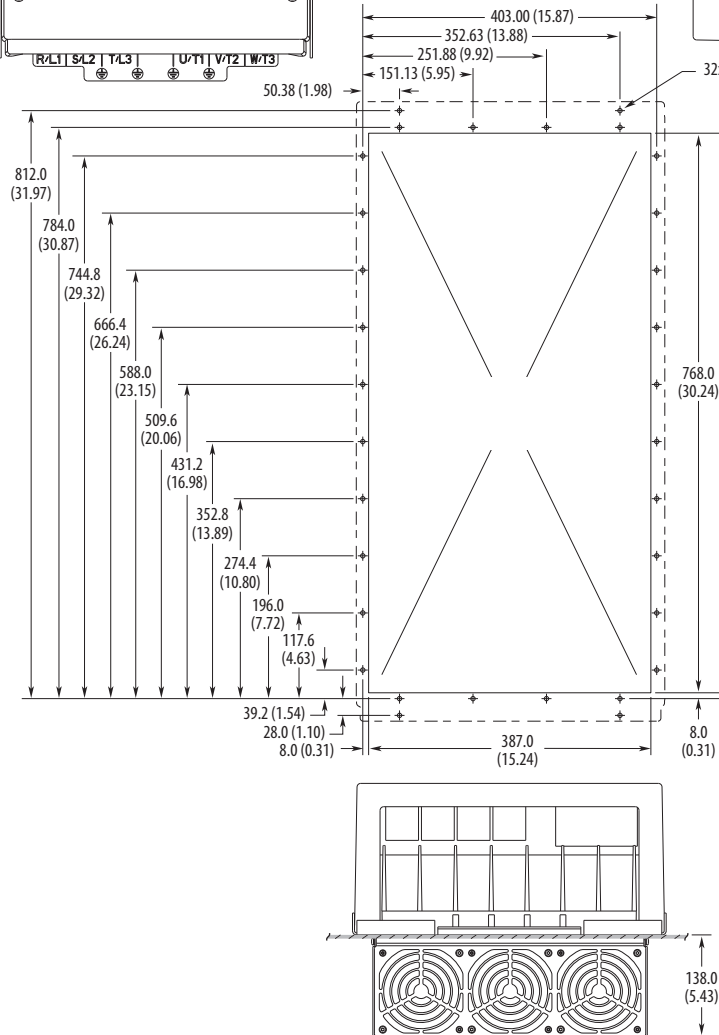
Frame

Type

Approximate Dimensions – mm (in.)

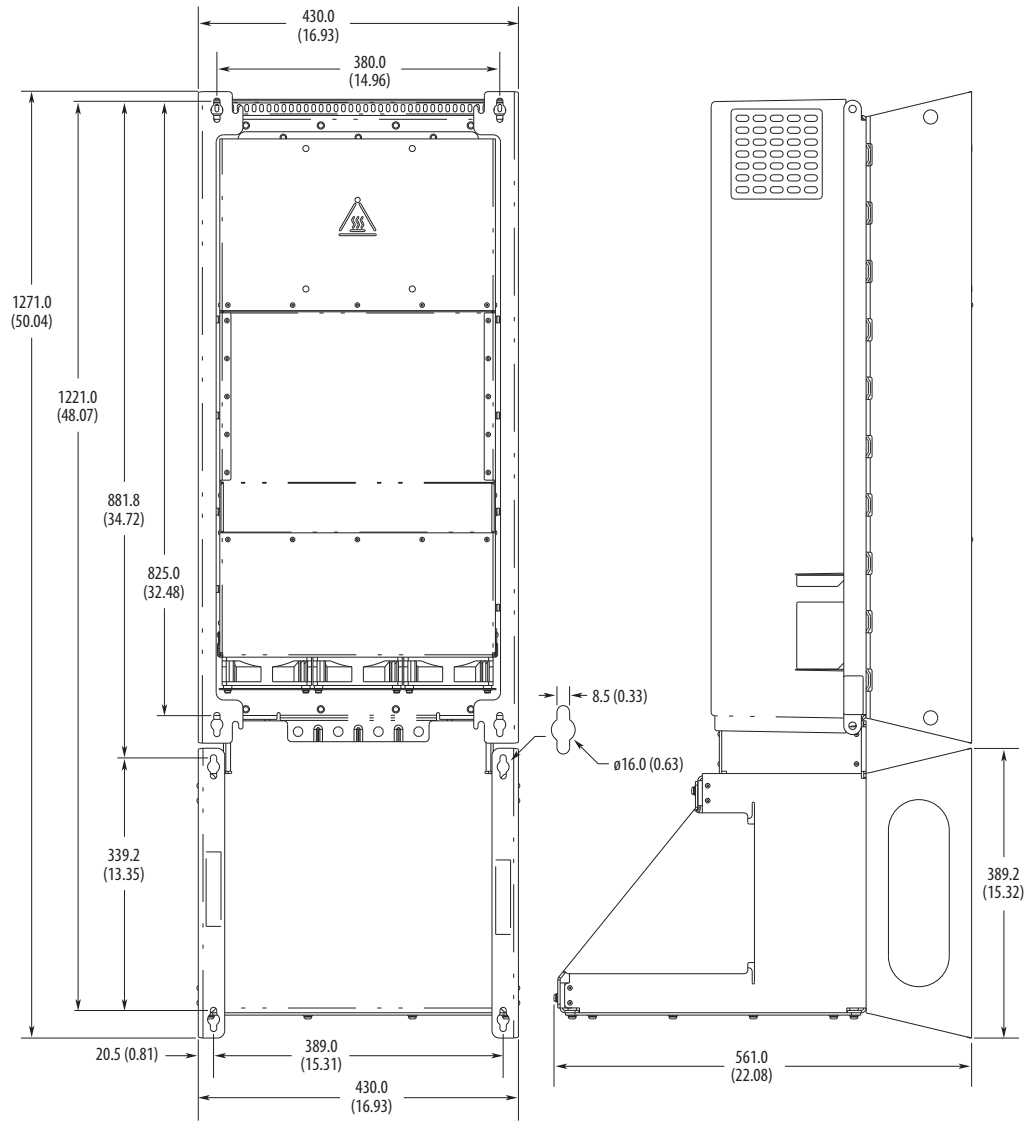


7 Flange Mount



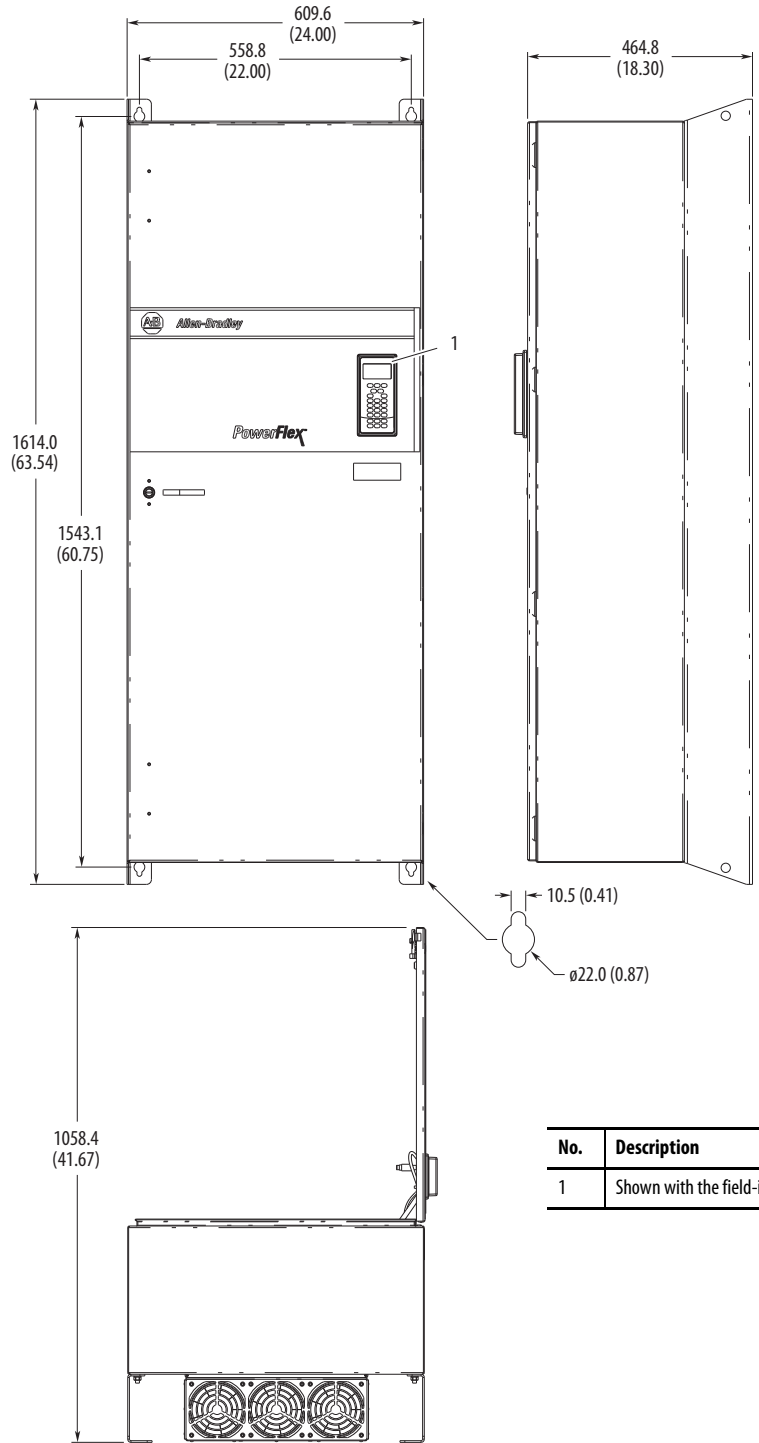
Frame	Type	Approximate Dimensions – mm (in.)
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7 NEMA/UL Type 1



Frame	Type	Approximate Dimensions – mm (in.)
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7 IP54, NEMA/UL Type 12



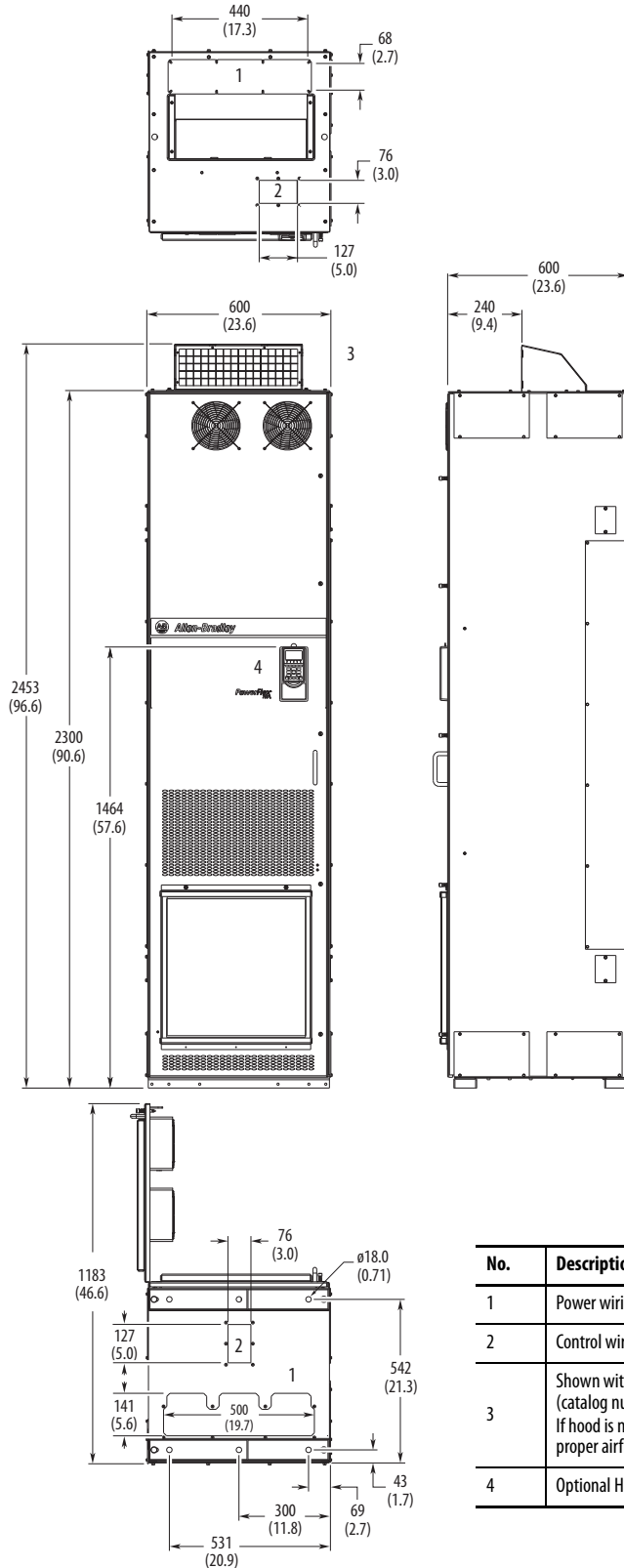
No.	Description
1	Shown with the field-installed 20-HIM-C6S.

Frame

Type

Approximate Dimensions – mm (in.)

8 MCC Style Cabinet,
600 mm (23.6 in.)
Deep
IP20, NEMA/UL Type 1
Enclosure Code B

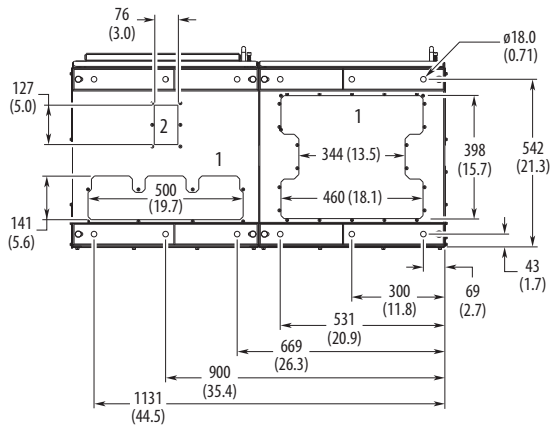
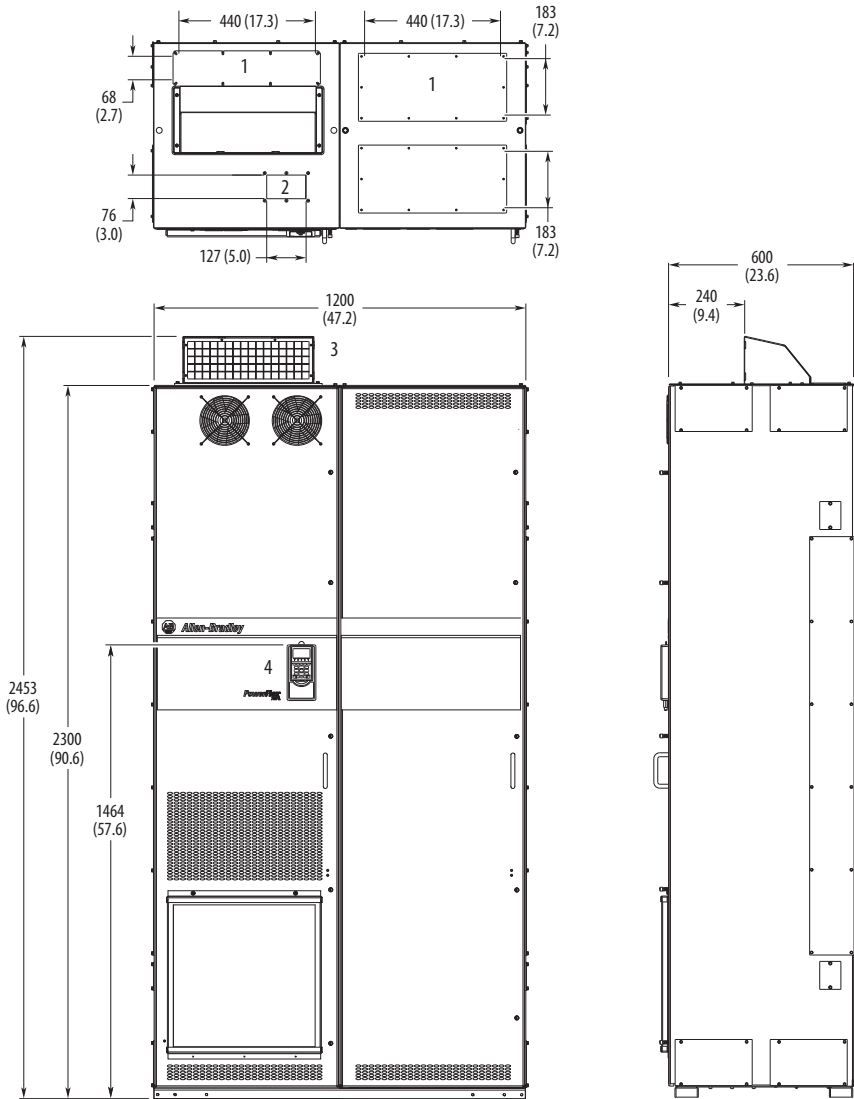


No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

Frame **Type** **Approximate Dimensions – mm (in.)**

8

MCC Style Cabinet with Wiring Bay, 600 mm (23.6 in.) Deep IP20, NEMA/UL Type 1 Enclosure Code B



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

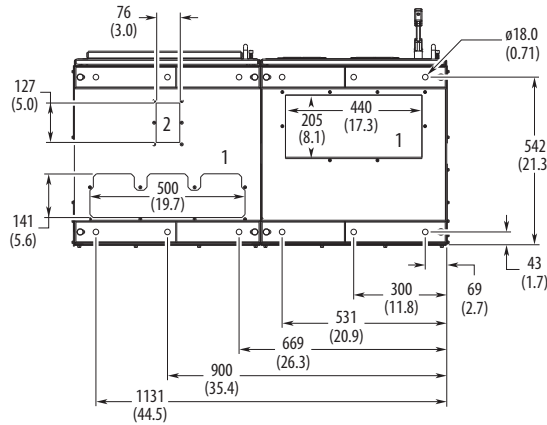
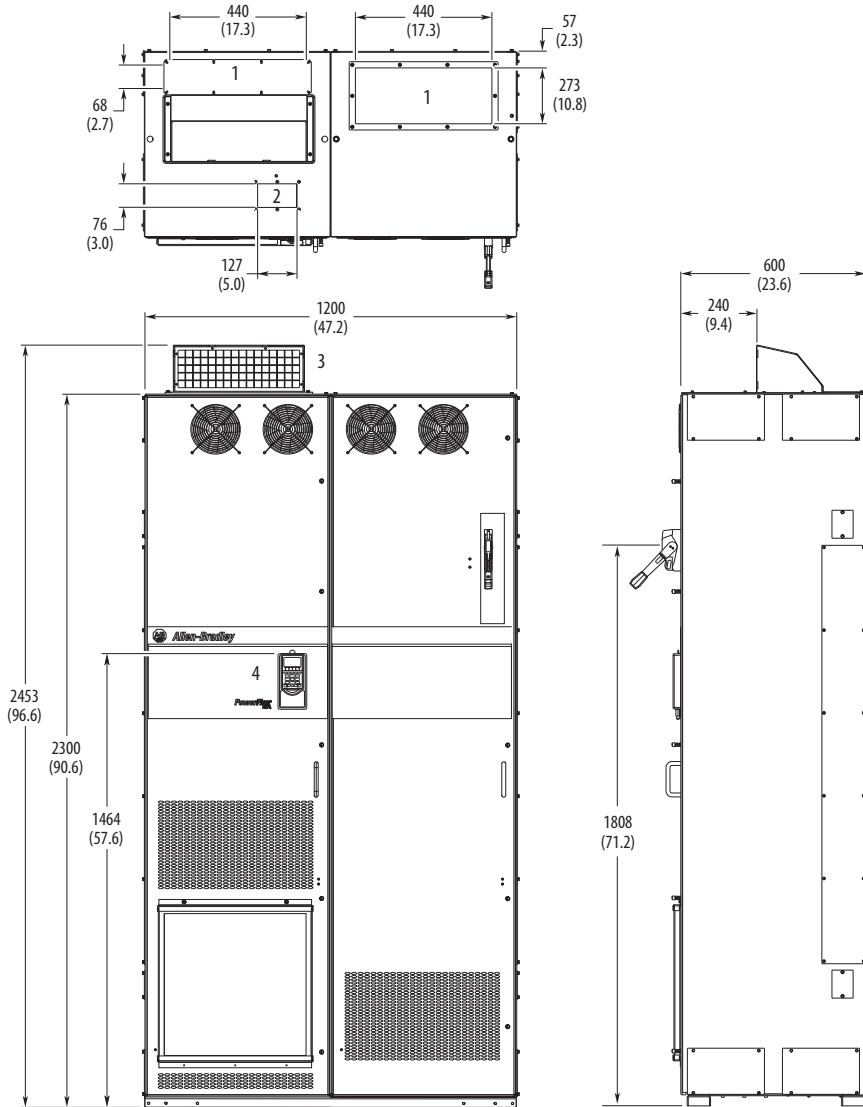
Frame

Type

Approximate Dimensions – mm (in.)

8

MCC Style Cabinet
with Cabinet Option
Bay, 600 mm (23.6
in.) Deep
IP20, NEMA/UL Type 1
Enclosure Code B

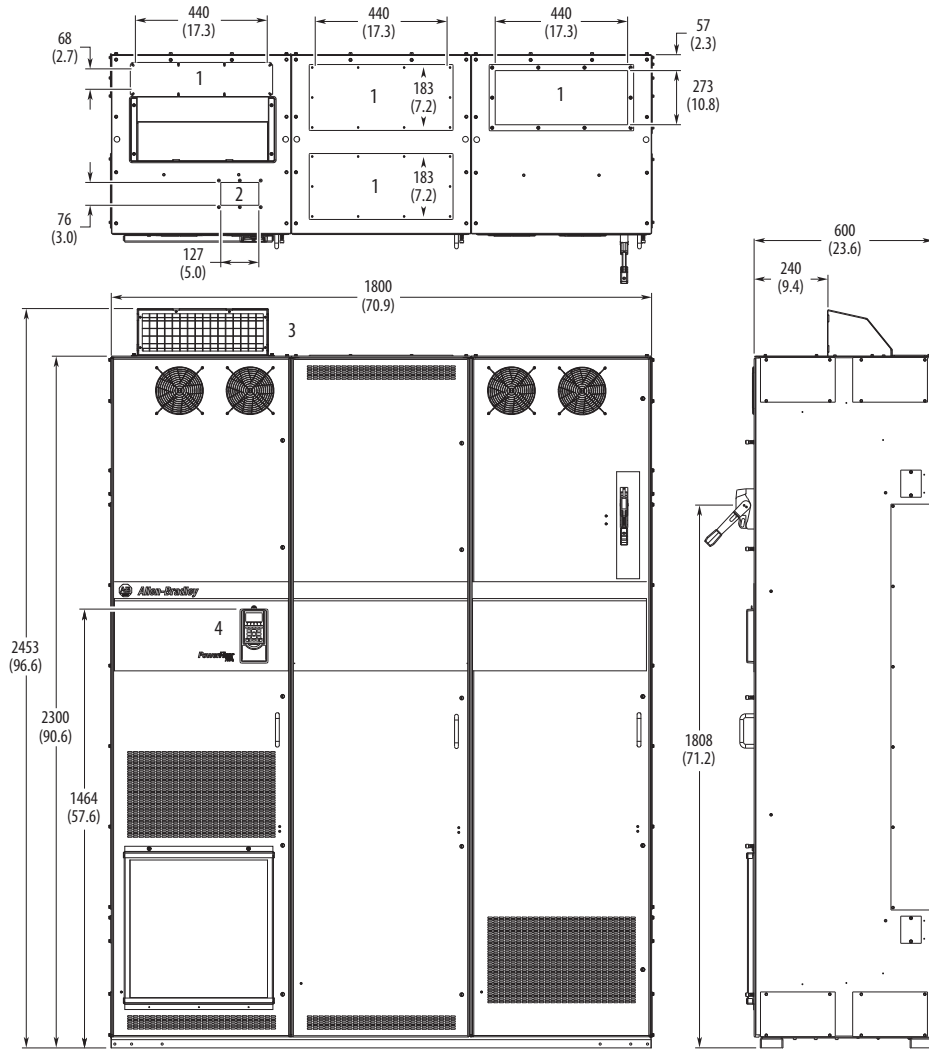


No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

Frame

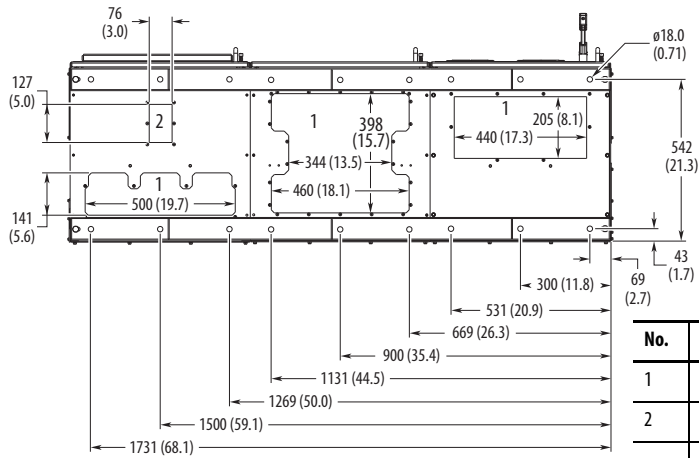
Type

Approximate Dimensions – mm (in.)



8

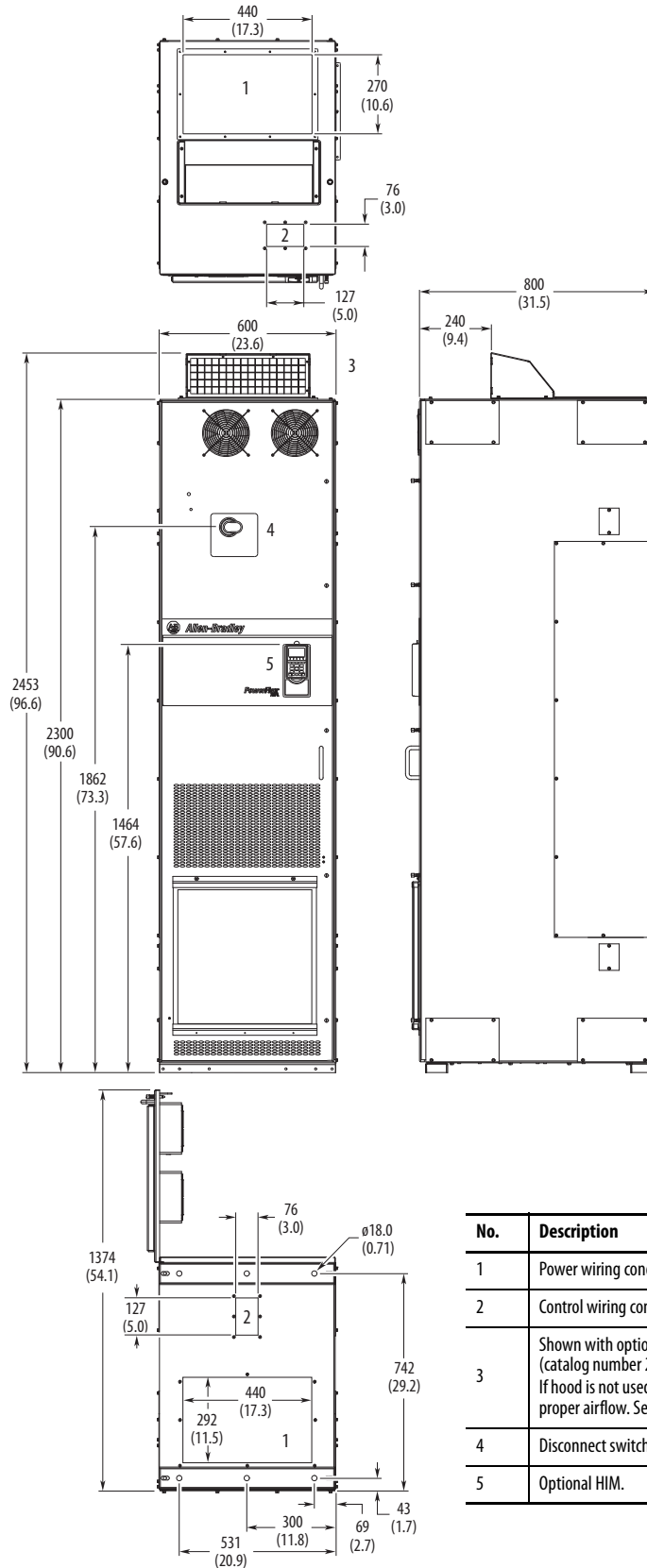
MCC Style Cabinet with Wiring Bay and Cabinet Option Bay, 600 mm (23.6 in.) Deep
 Deep
 IP20, NEMA/UL Type 1
 Enclosure Code B



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-H00D1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

Frame **Type** **Approximate Dimensions – mm (in.)**

8 MCC Style Cabinet,
800 mm (31.5 in.)
Deep
IP20, NEMA/UL Type 1
Enclosure Code L
(AC Input)
Enclosure Codes P, W
(DC Input)



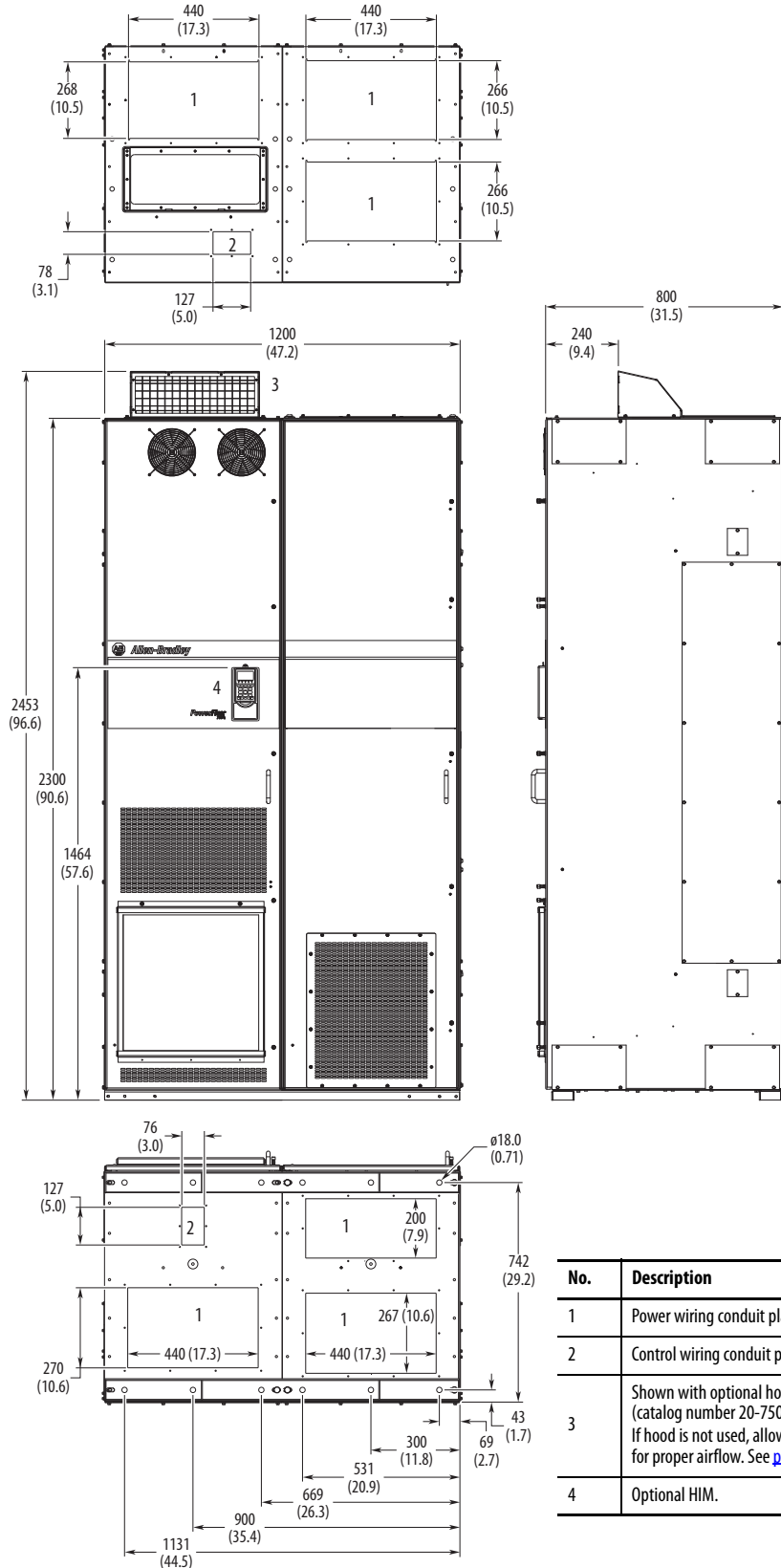
No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Disconnect switch - Common DC Input drives.
5	Optional HIM.

Frame

Type

Approximate Dimensions – mm (in.)

8 MCC Style Cabinet with Wiring Bay, 800 mm (31.5 in.) Deep IP20, NEMA/UL Type 1 Enclosure Code L, P, W



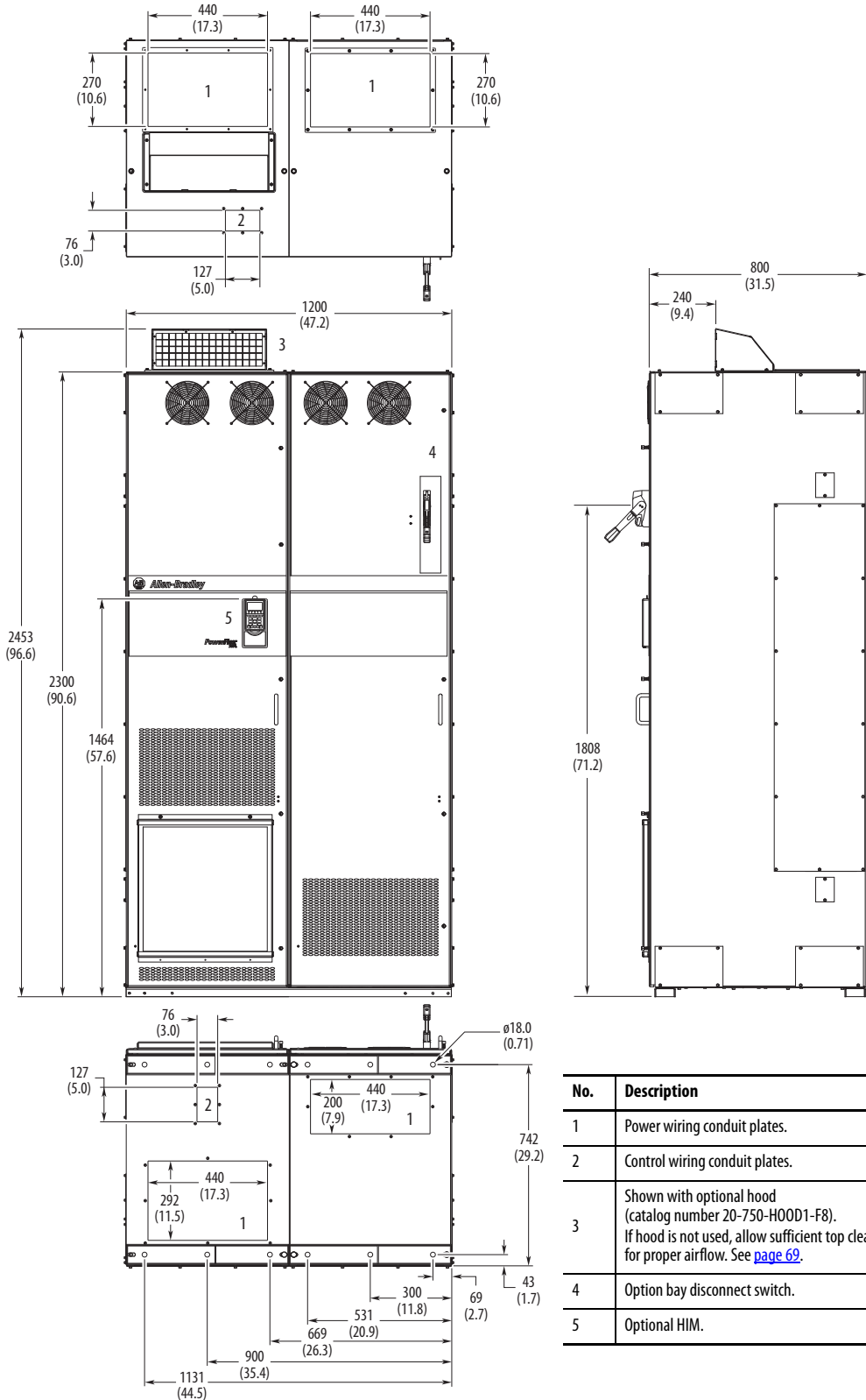
No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

Frame

Type

Approximate Dimensions – mm (in.)

8 MCC Style Cabinet with Cabinet Option Bay, 800 mm (31.5 in.) Deep IP20, NEMA/UL Type 1 Enclosure Codes L, P, W

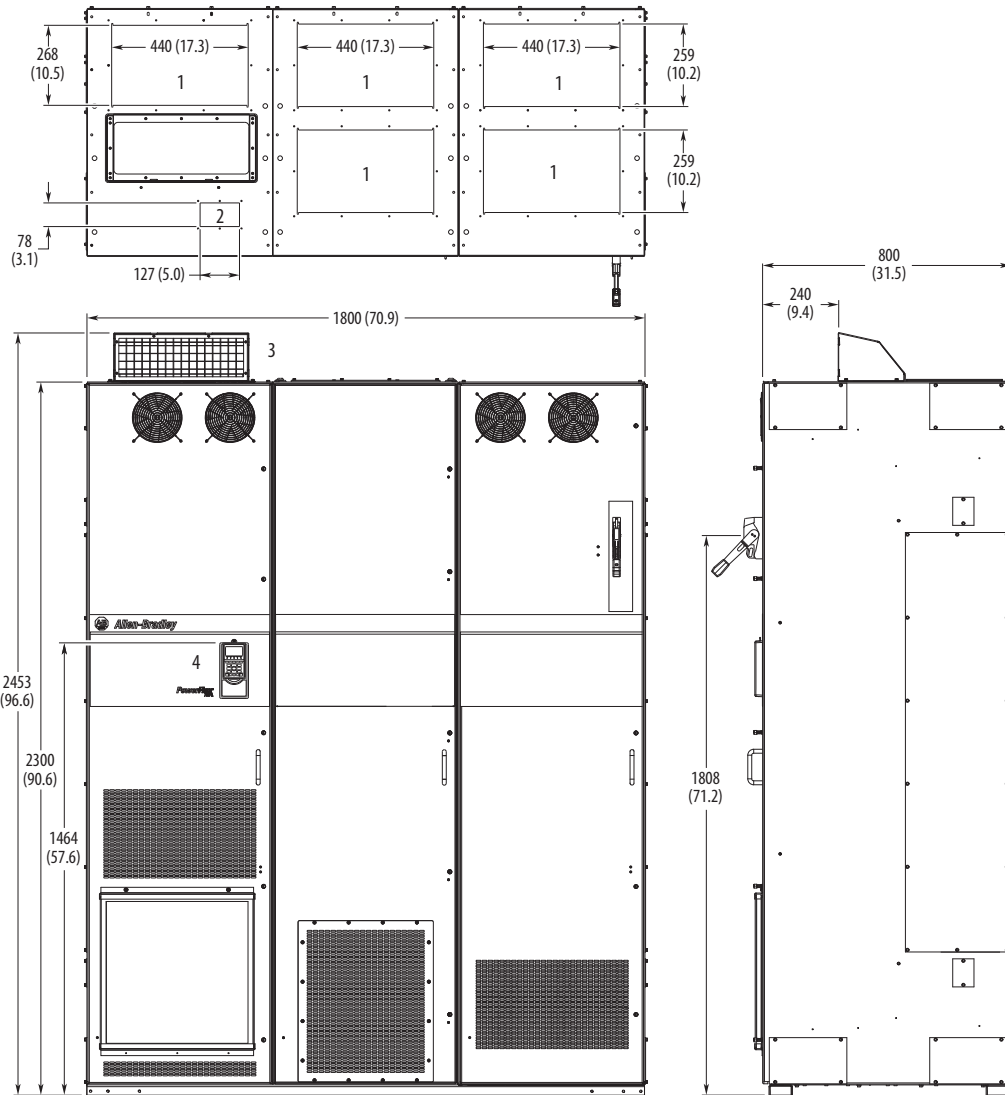


No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Option bay disconnect switch.
5	Optional HIM.

Frame

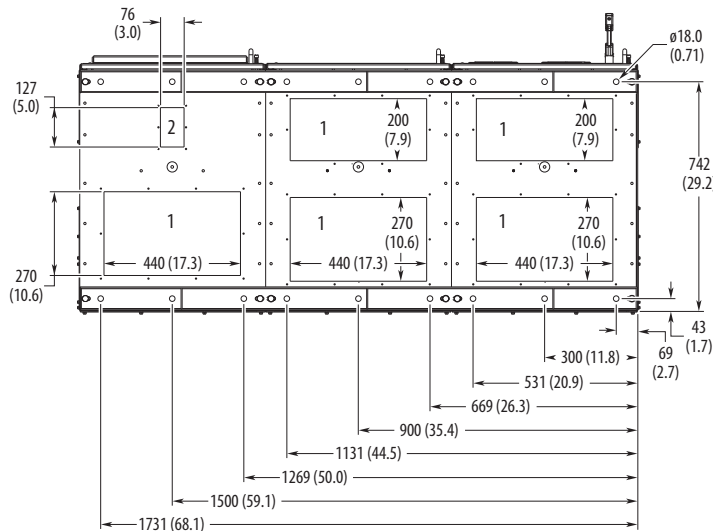
Type

Approximate Dimensions – mm (in.)



8

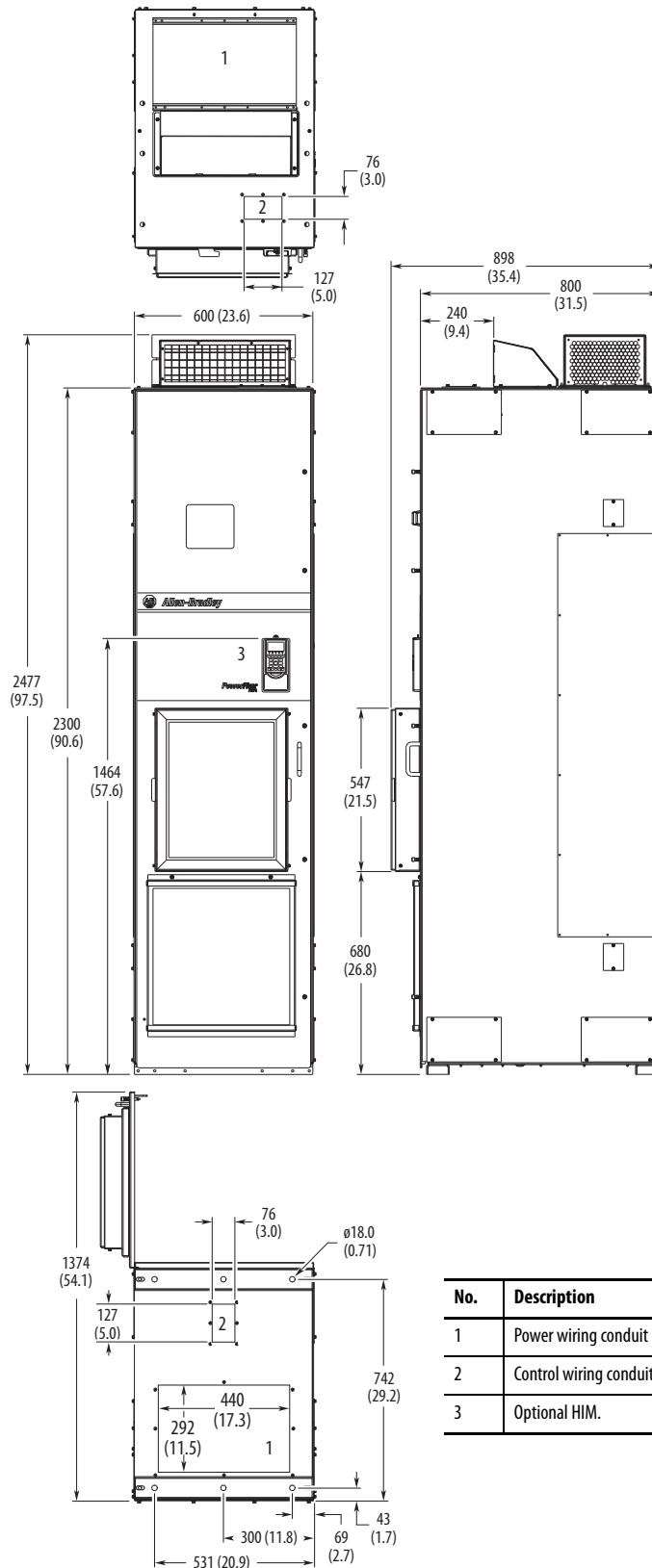
MCC Style Cabinet with Wiring Bay and Cabinet Option Bay, 800 mm (31.5 in.) Deep
 IP20, NEMA/UL Type 1
 Enclosure Code L, P, W



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

Frame **Type** **Approximate Dimensions – mm (in.)**

8 MCC Style Cabinet,
800 mm (31.5 in.)
Deep
IP54, NEMA 12
Enclosure Codes K, Y
(DC Input)
IP54, UL Type 12
Enclosure Code J
(AC Input)



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Optional HIM.

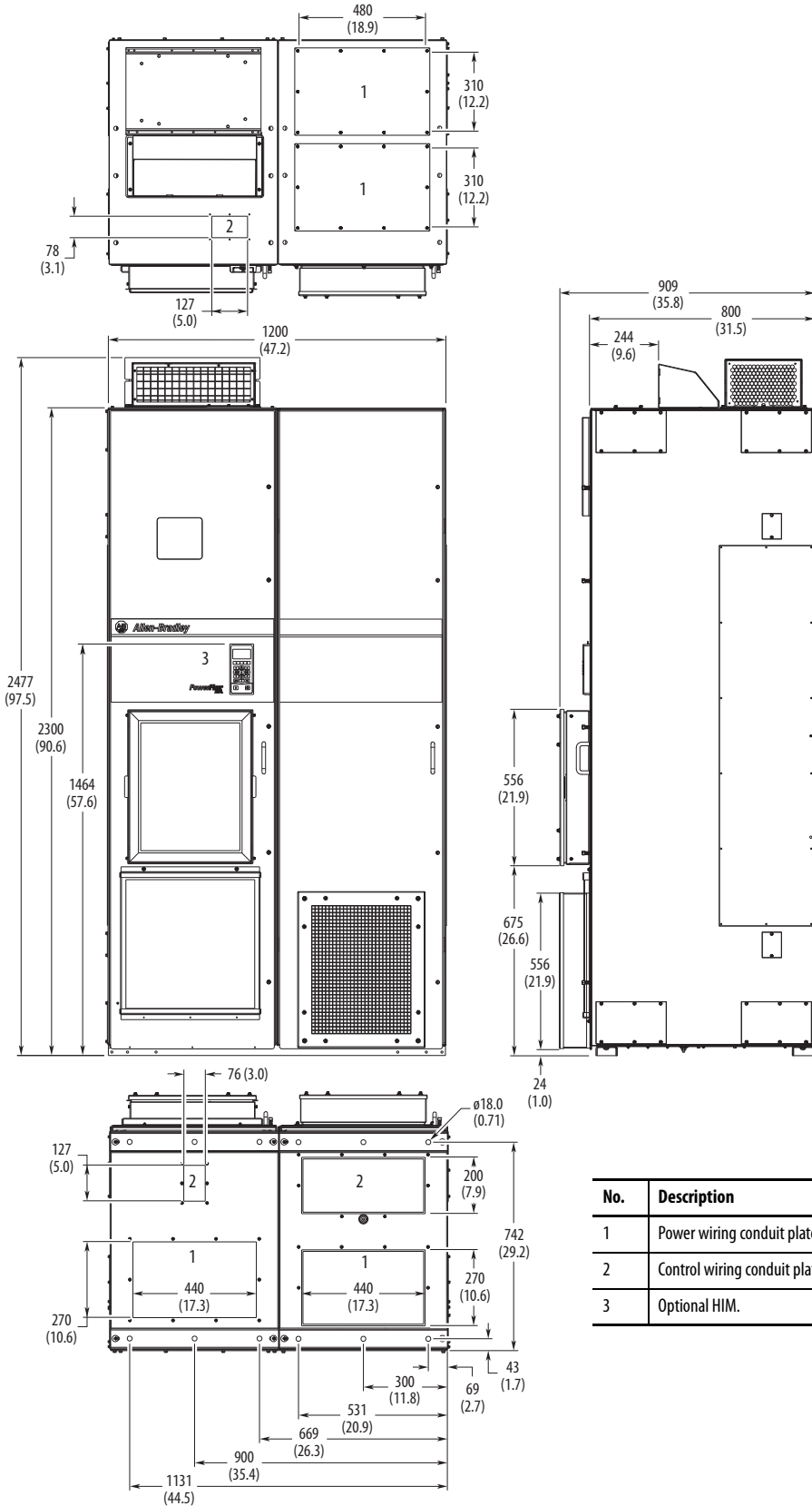
Frame

Type

Approximate Dimensions – mm (in.)

8

MCC Style Cabinet with Wiring Bay, 800 mm (31.5 in.) Deep
 IP54, NEMA 12 Enclosure Codes K, Y (DC Input)
 IP54, UL Type 12 Enclosure Code J (AC Input)



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Optional HIM.

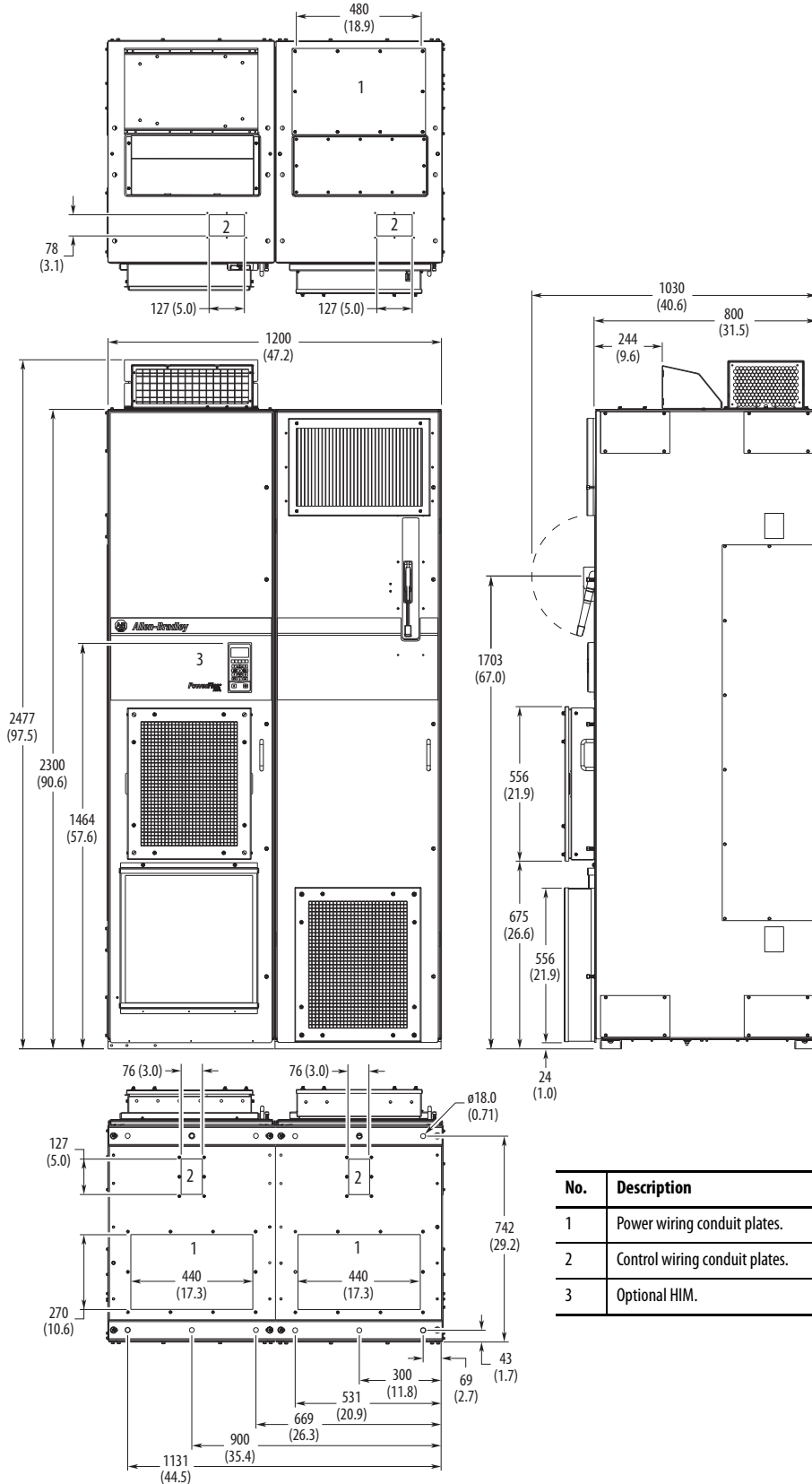
Frame

Type

Approximate Dimensions – mm (in.)

8

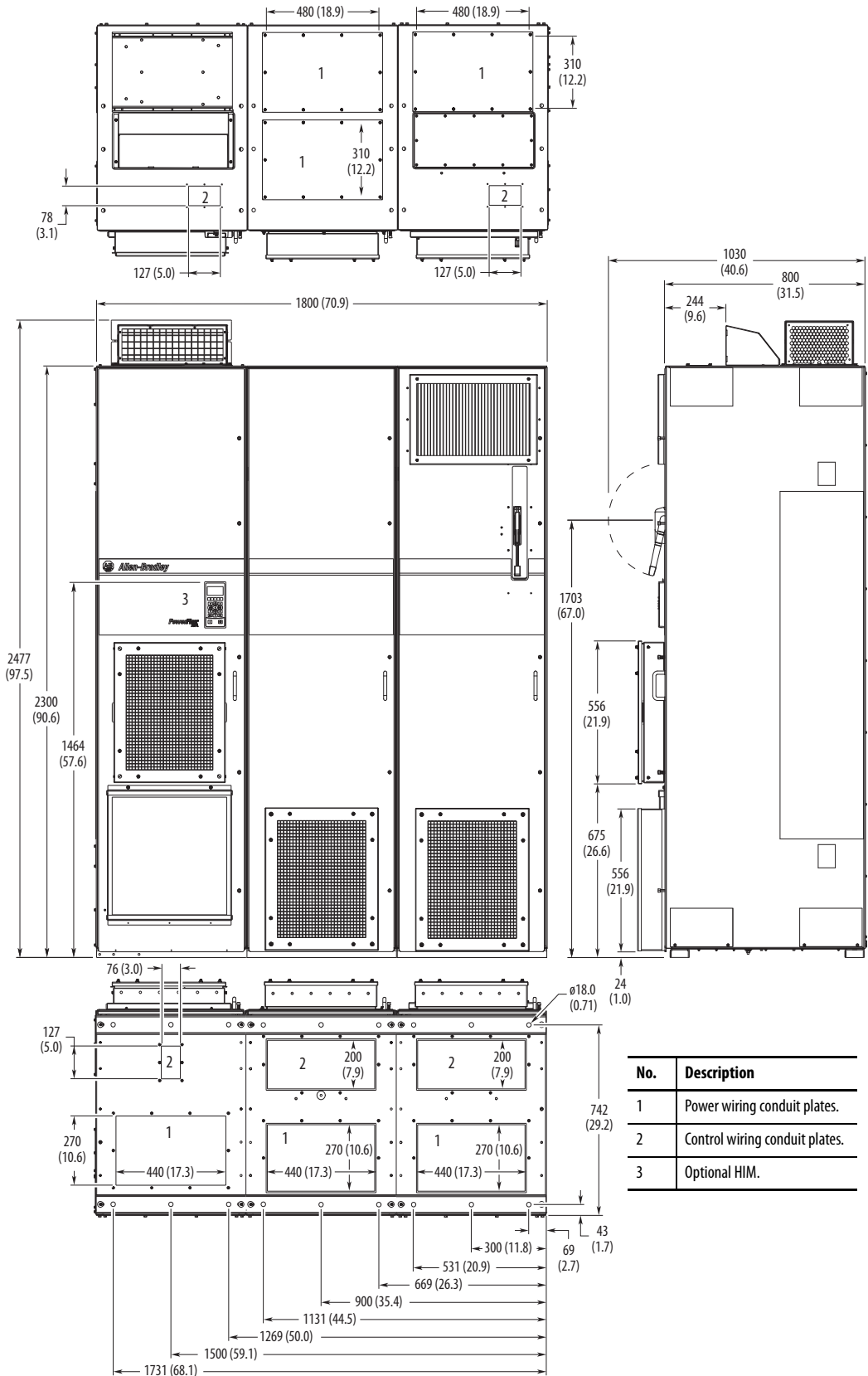
MCC Style Cabinet
with Cabinet Option
Bay, 800 mm (31.5
in.) Deep
IP54, NEMA 12
Enclosure Codes K, Y
(DC Input)
IP54, UL Type 12
Enclosure Code J
(AC Input)



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Optional HIM.

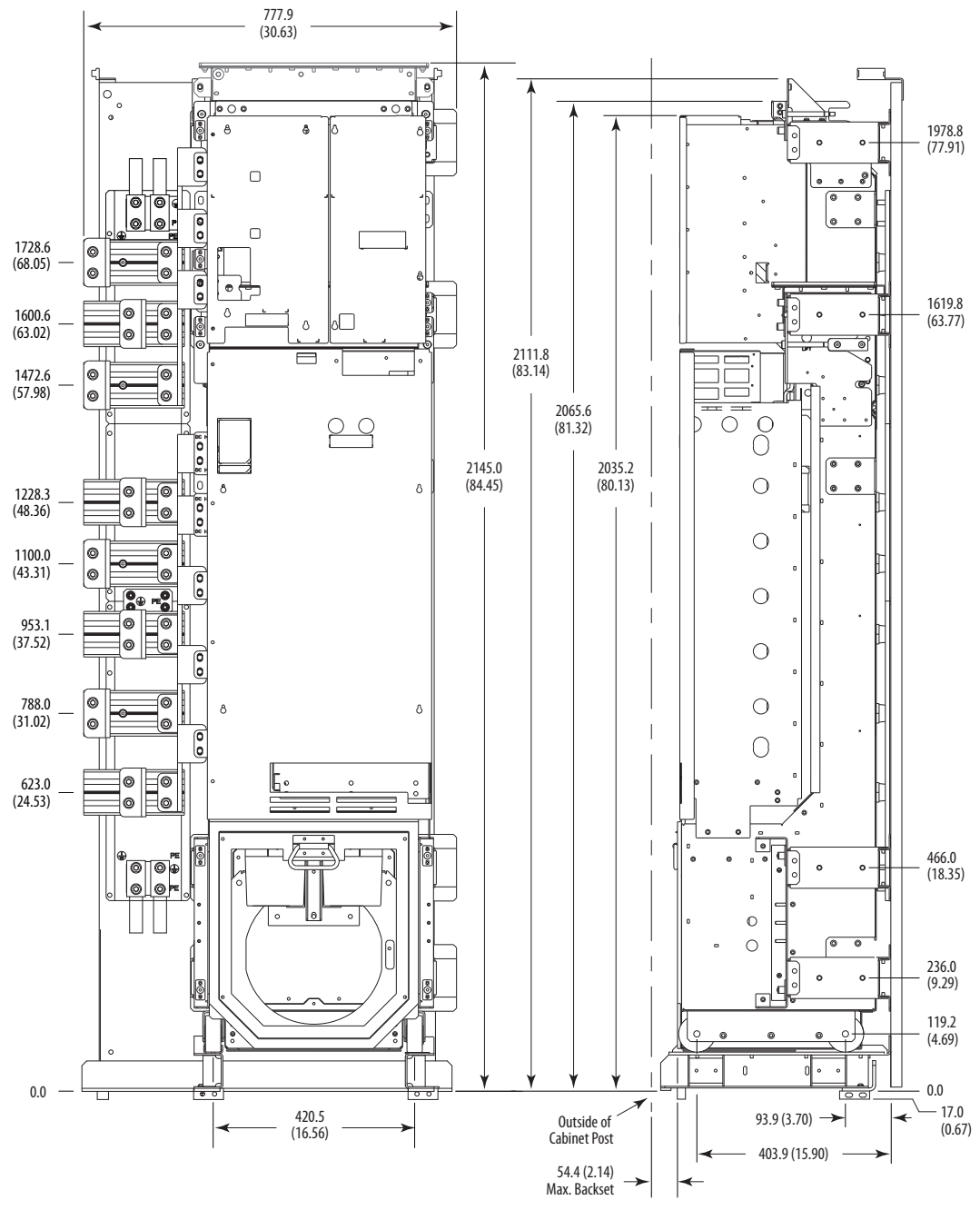
Frame **Type** **Approximate Dimensions – mm (in.)**

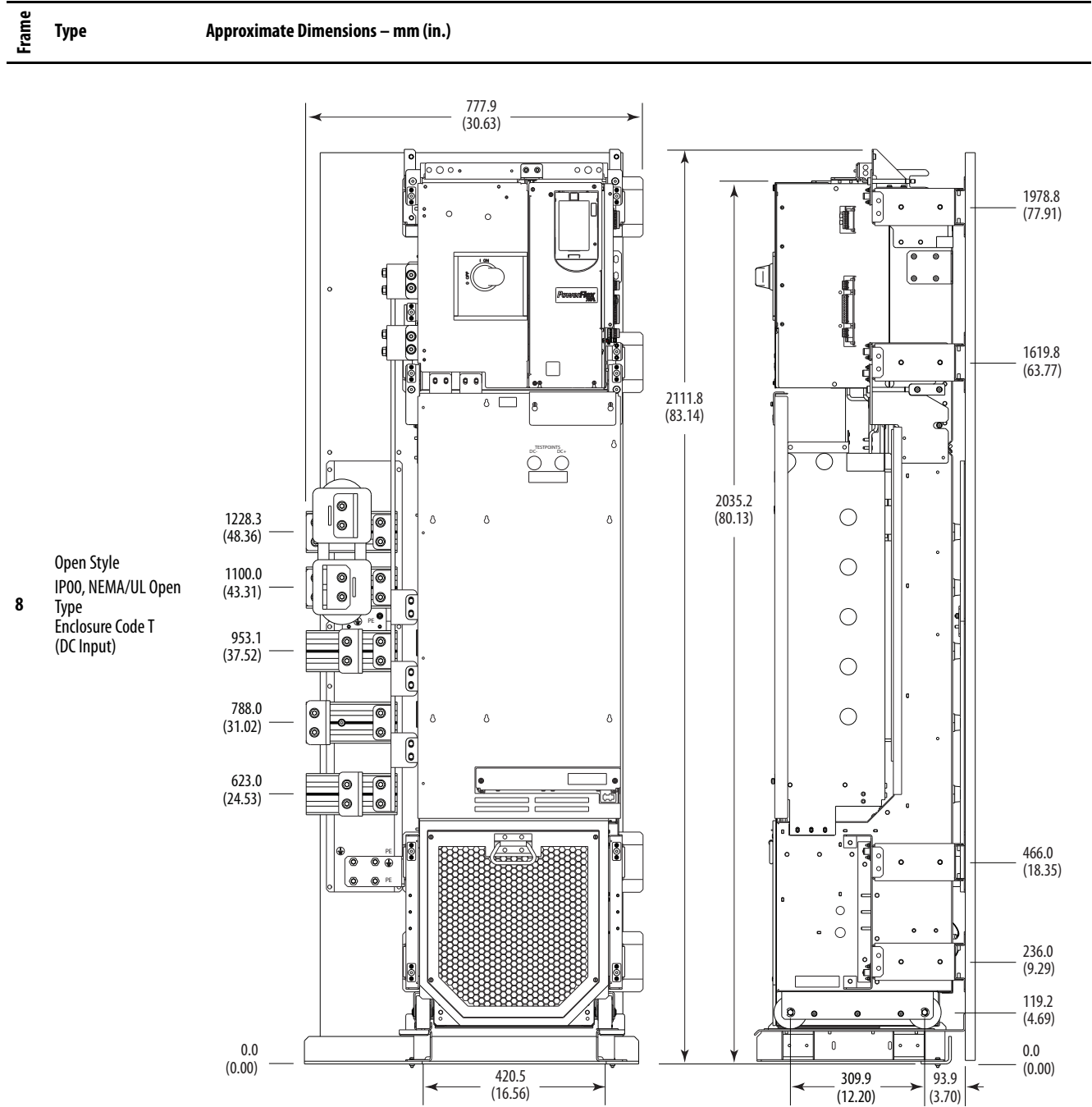
8 MCC Style Cabinet with Wiring Bay and Cabinet Option Bay, 800 mm (31.5 in.) Deep
 IP54, NEMA 12 Enclosure Codes K, Y (DC Input)
 IP54, UL Type 12 Enclosure Code J (AC Input)



Frame	Type	Approximate Dimensions – mm (in.)
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8
Open Style
IP00, NEMA/UL Open
Type
Enclosure Code T
(AC Input)





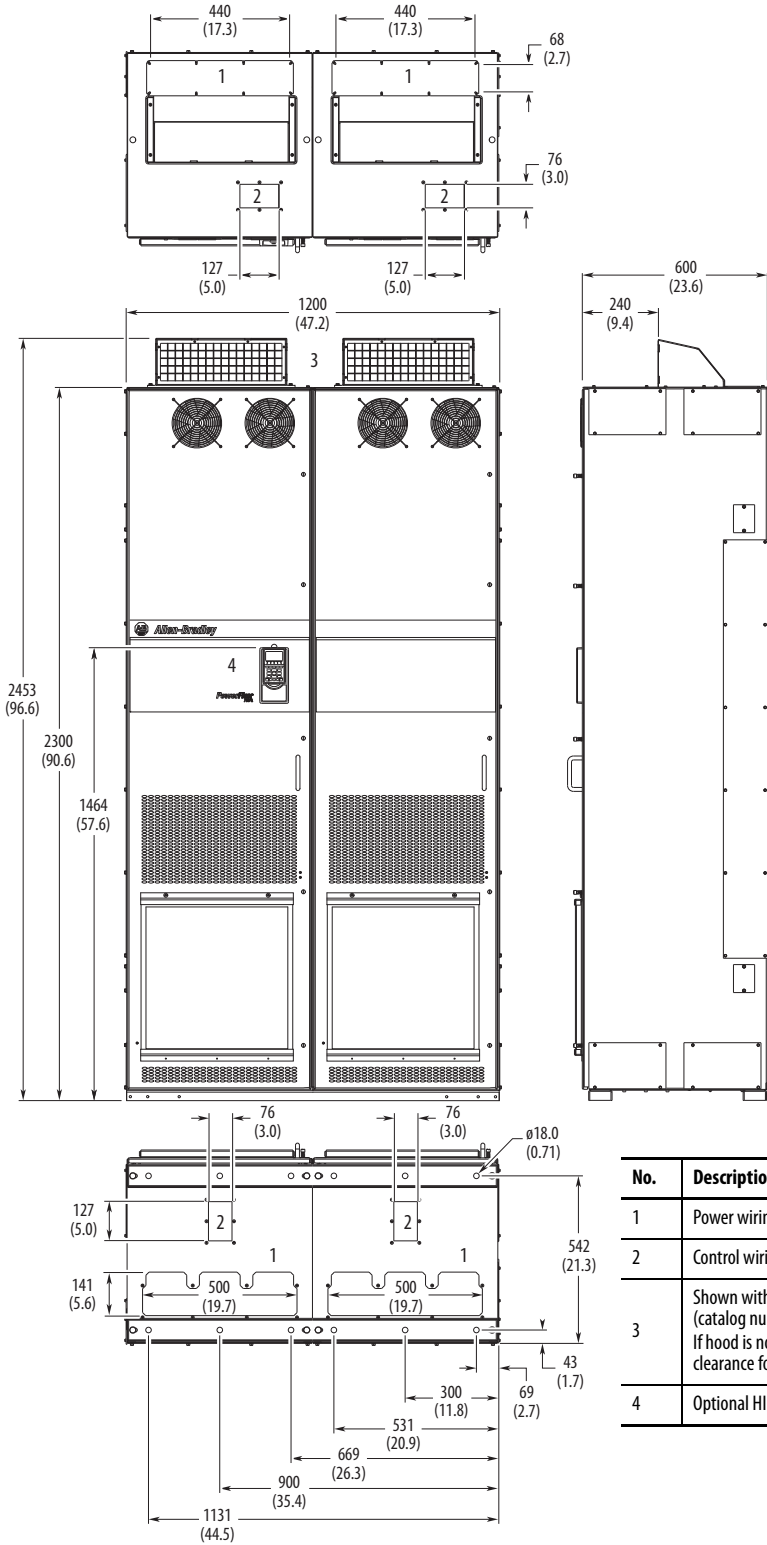
Frame

Type

Approximate Dimensions – mm (in.)

9

MCC Style Cabinet,
600 mm (23.6 in.)
Deep
IP20, NEMA/UL Type 1
Enclosure Code B



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

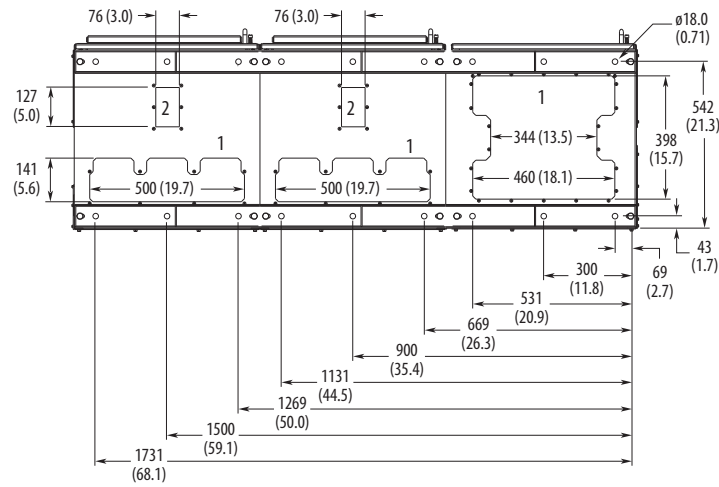
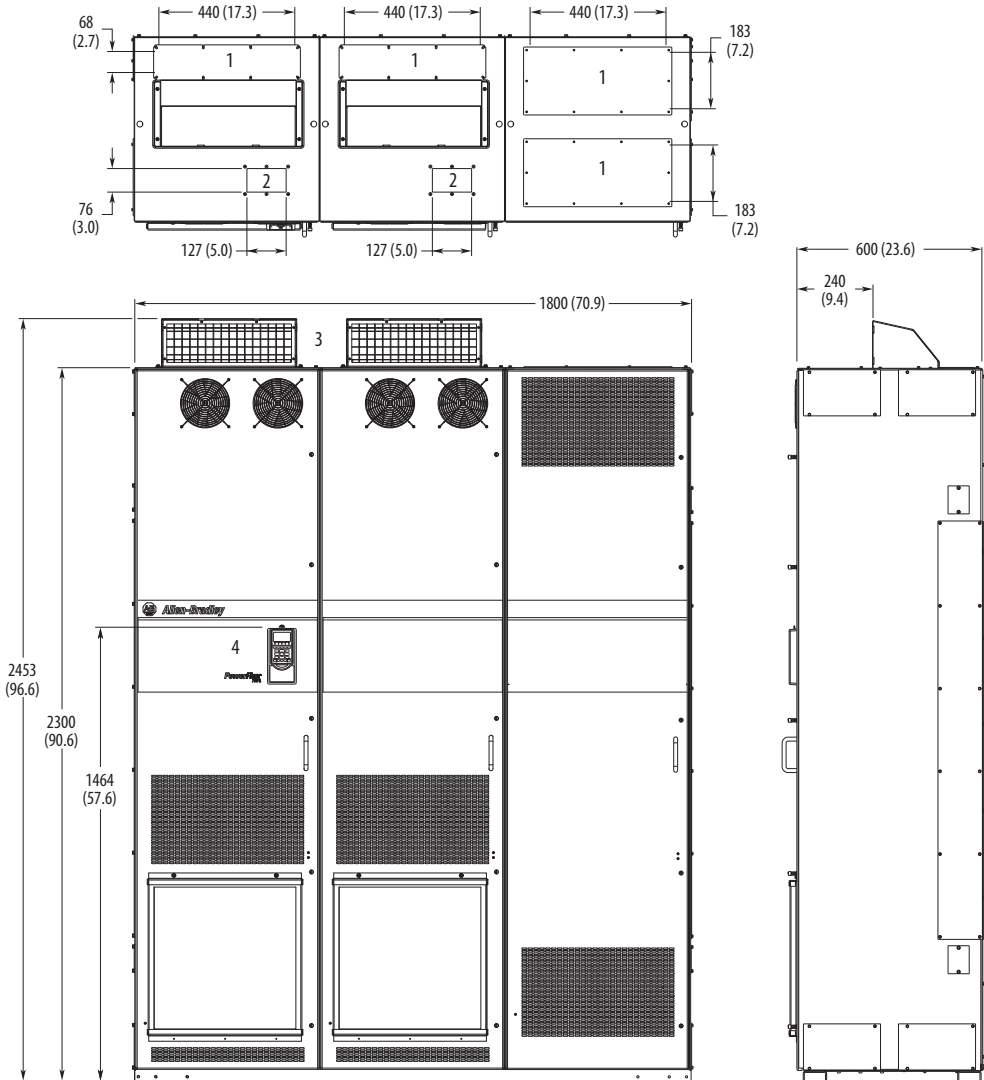
Frame

Type

Approximate Dimensions – mm (in.)

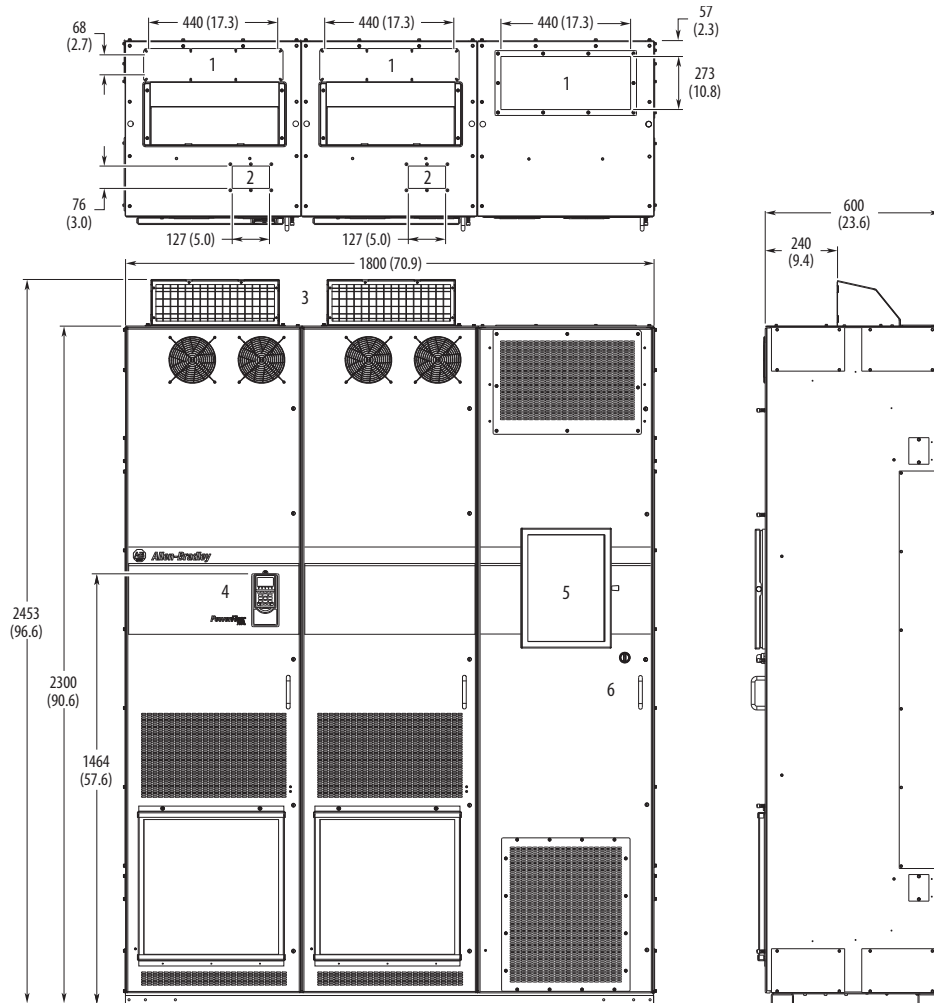
9

MCC Style Cabinet with Wiring Bay, 600 mm (23.6 in.) Deep IP20, NEMA/UL Type 1 Enclosure Code B

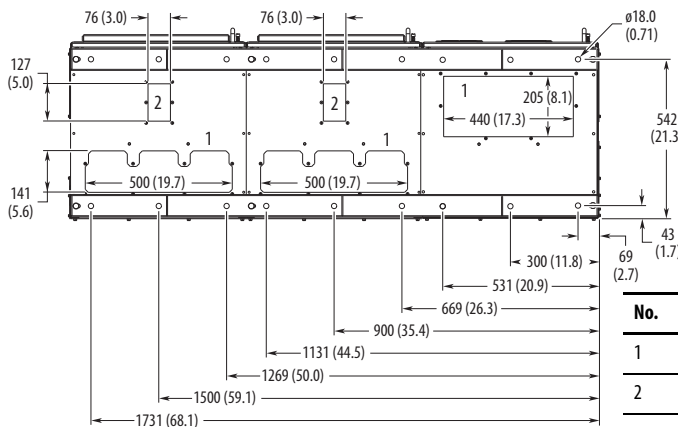


No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

Frame Type **Approximate Dimensions – mm (in.)**



9 MCC Style Cabinet with Cabinet Option Bay, 600 mm (23.6 in.) Deep
 IP20, NEMA/UL Type 1 Enclosure Code L (AC Input)
 Enclosure Codes P, W (DC Input)



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.
5	Option bay disconnect switch access door.
6	Interlock override switch.

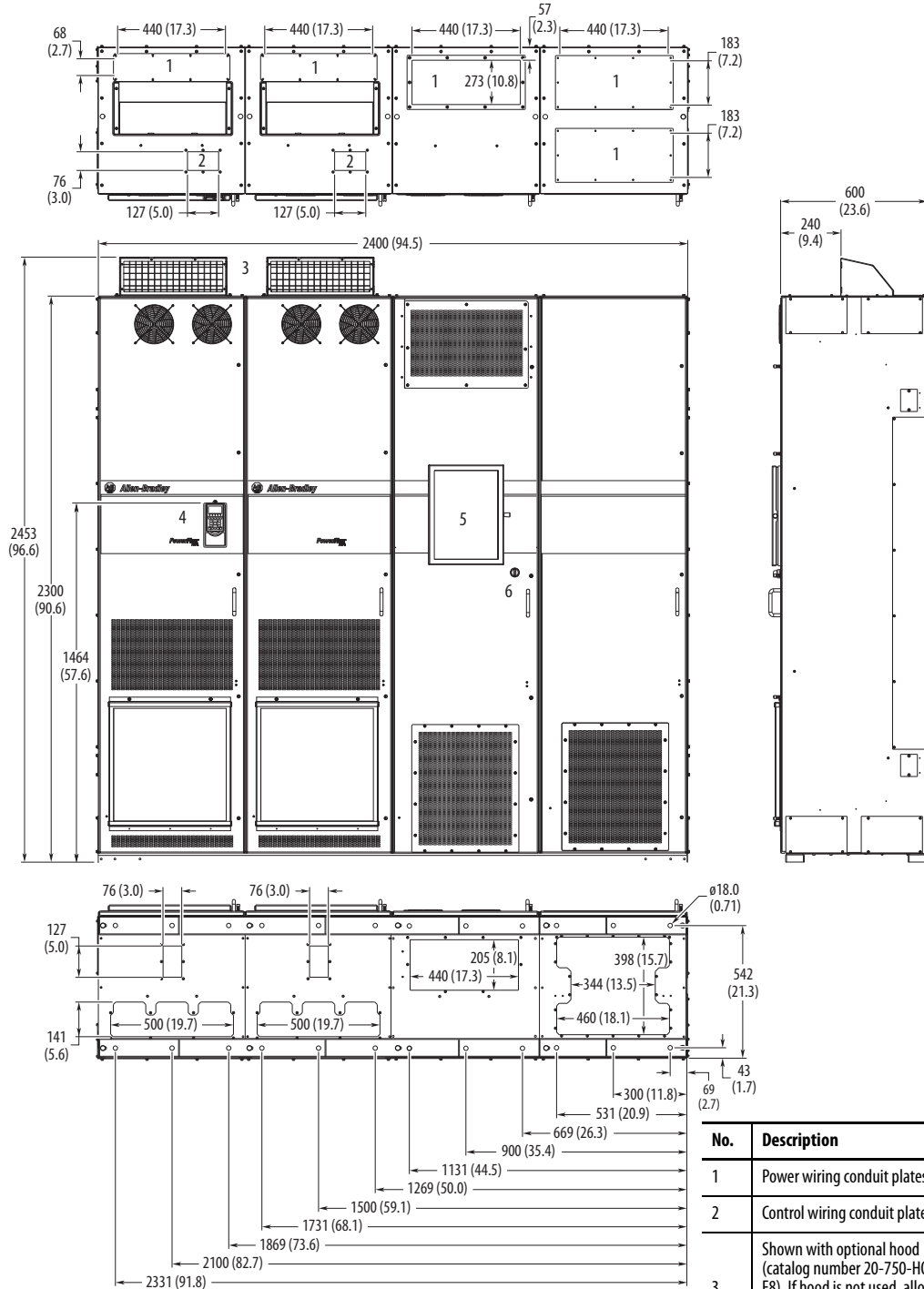
Frame

Type

Approximate Dimensions – mm (in.)

9

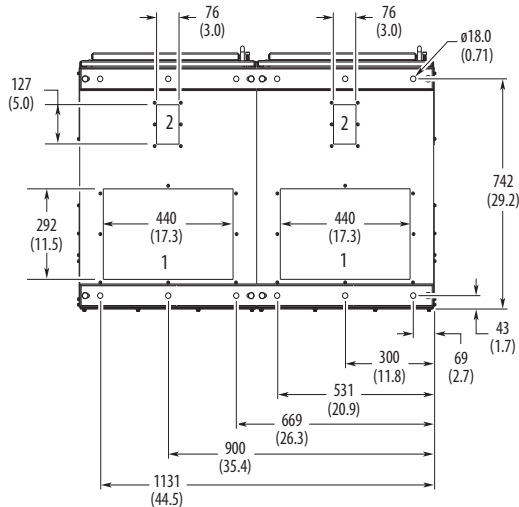
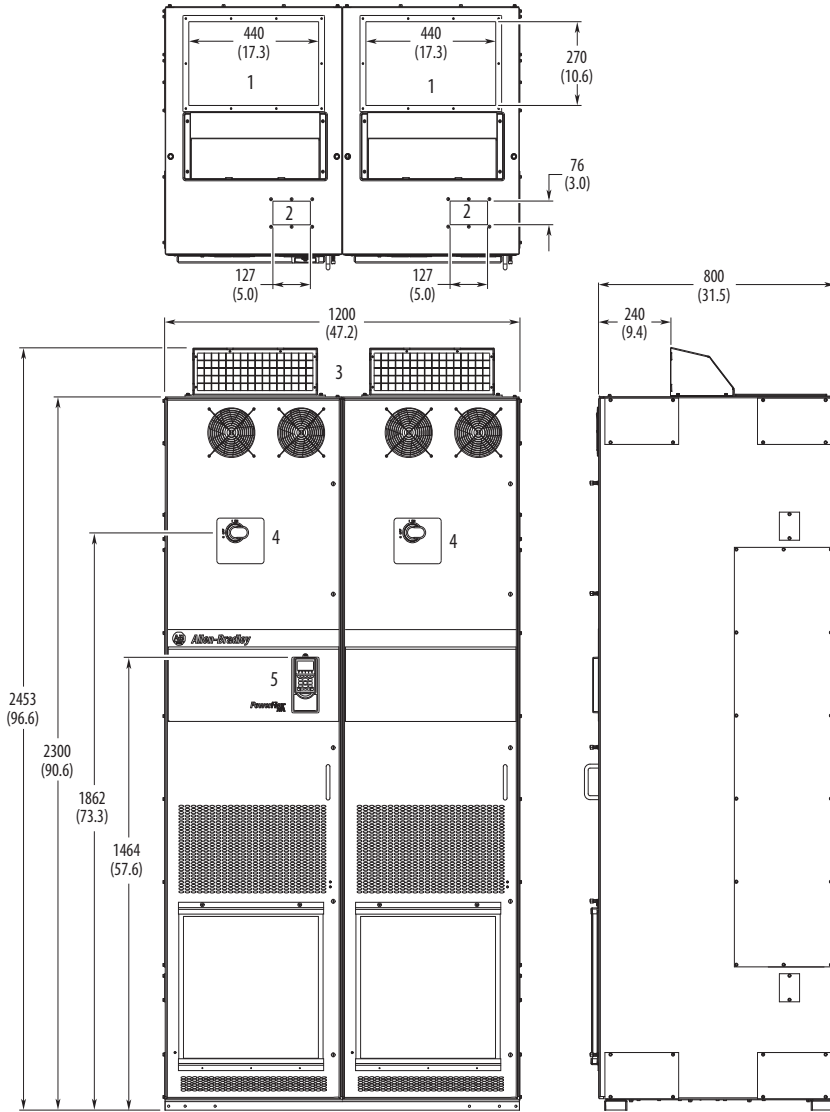
MCC Style Cabinet with Cabinet Option Bay and Wiring Bay, 600 mm (23.6 in.) Deep
 Deep
 IP20, NEMA/UL Type 1 Enclosure Codes L, P, W



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.
5	Option bay disconnect switch access door.
6	Interlock override switch.

Frame Type **Approximate Dimensions – mm (in.)**

9 MCC Style Cabinet,
800 mm (31.5 in.)
Deep
IP20, NEMA/UL Type 1
Enclosure Code L
(AC Input)
Enclosure Codes P, W
(DC Input)

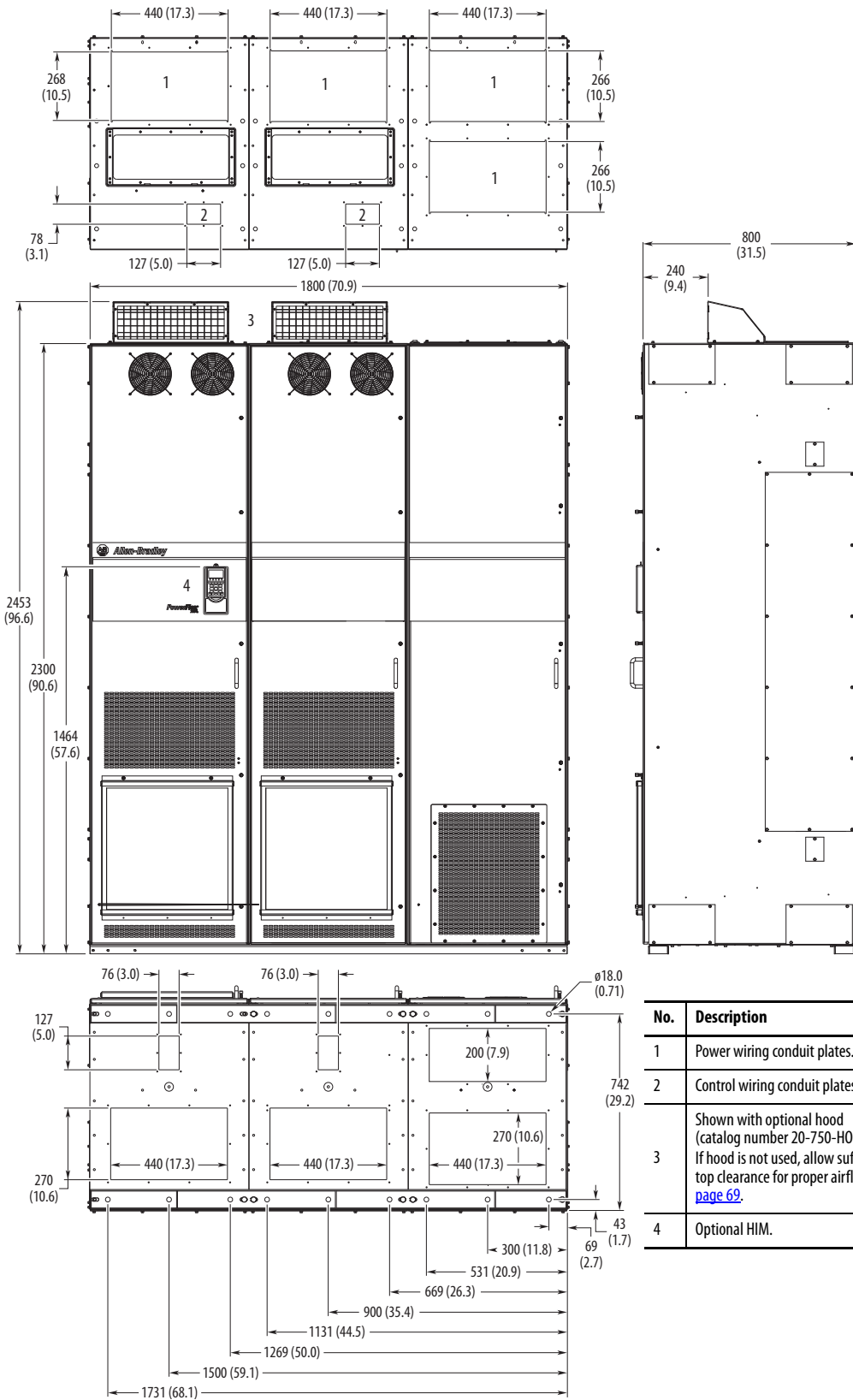


No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Disconnect switches - Common DC Input drives.
5	Optional HIM.

Frame Type **Approximate Dimensions – mm (in.)**

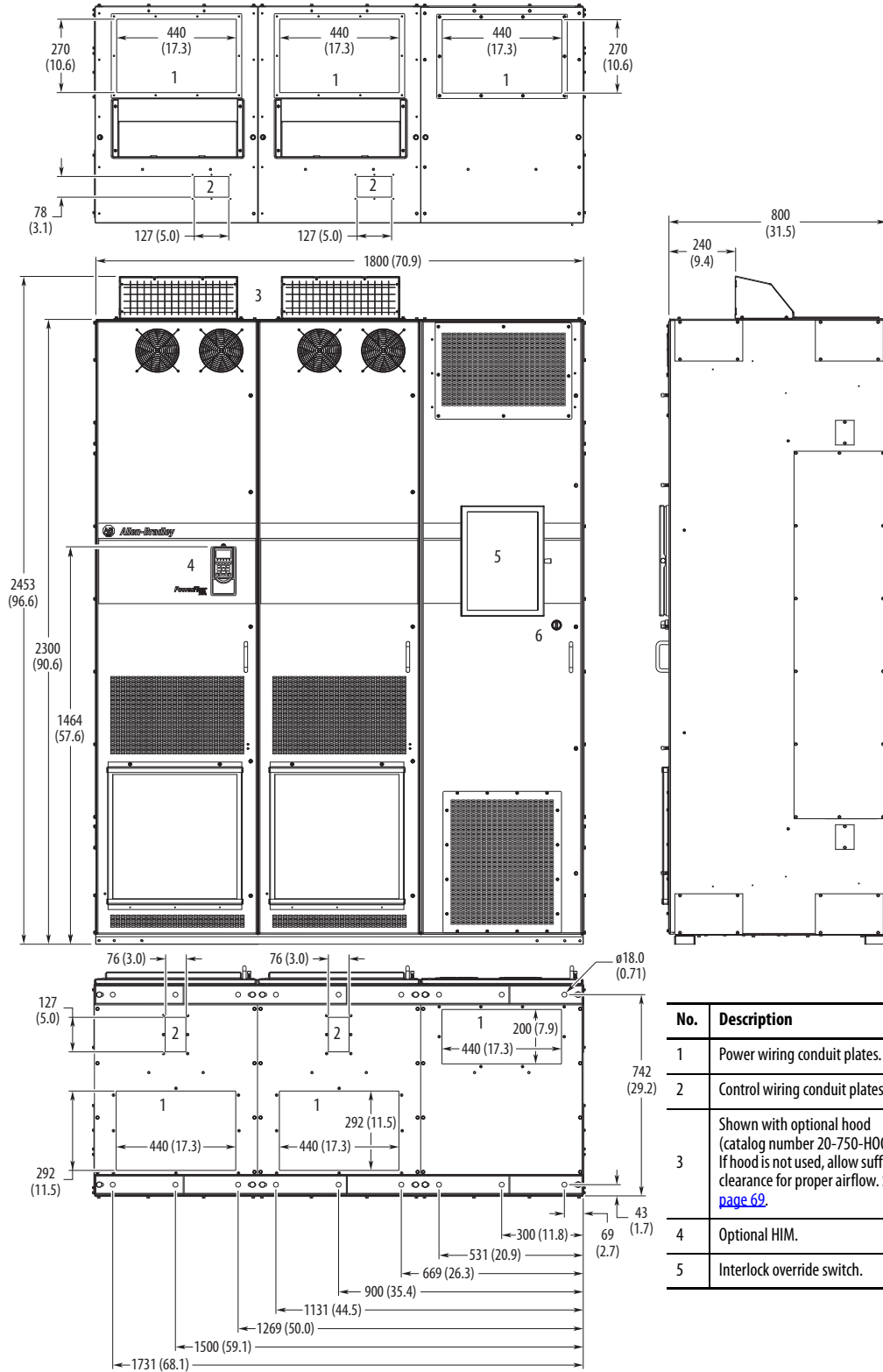
9

MCC Style Cabinet with Wiring Bay, 800 mm (31.5 in.) Deep
 IP20, NEMA/UL Type 1 Enclosure Code L (AC Input)
 Enclosure Codes P, W (DC Input)



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

Frame Type **Approximate Dimensions – mm (in.)**



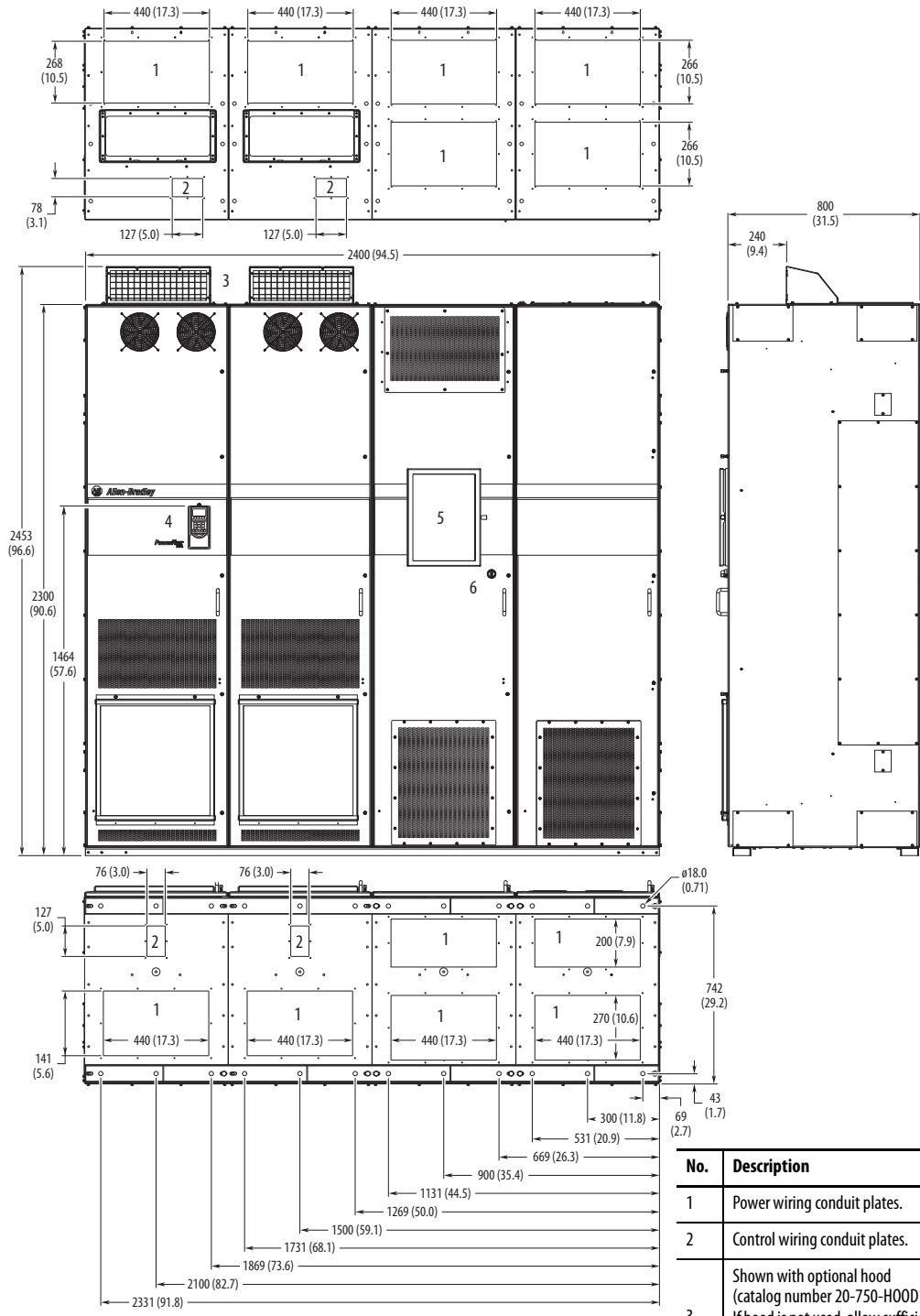
- 9** MCC Style Cabinet with Cabinet Option Bay, 800 mm (31.5 in.) Deep
 IP20, NEMA/UL Type 1 Enclosure Code L (AC Input)
 Enclosure Codes P, W (DC Input)

No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.
5	Interlock override switch.

Frame

Type

Approximate Dimensions – mm (in.)



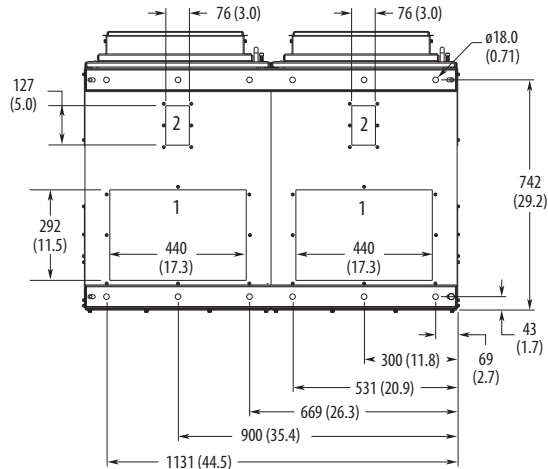
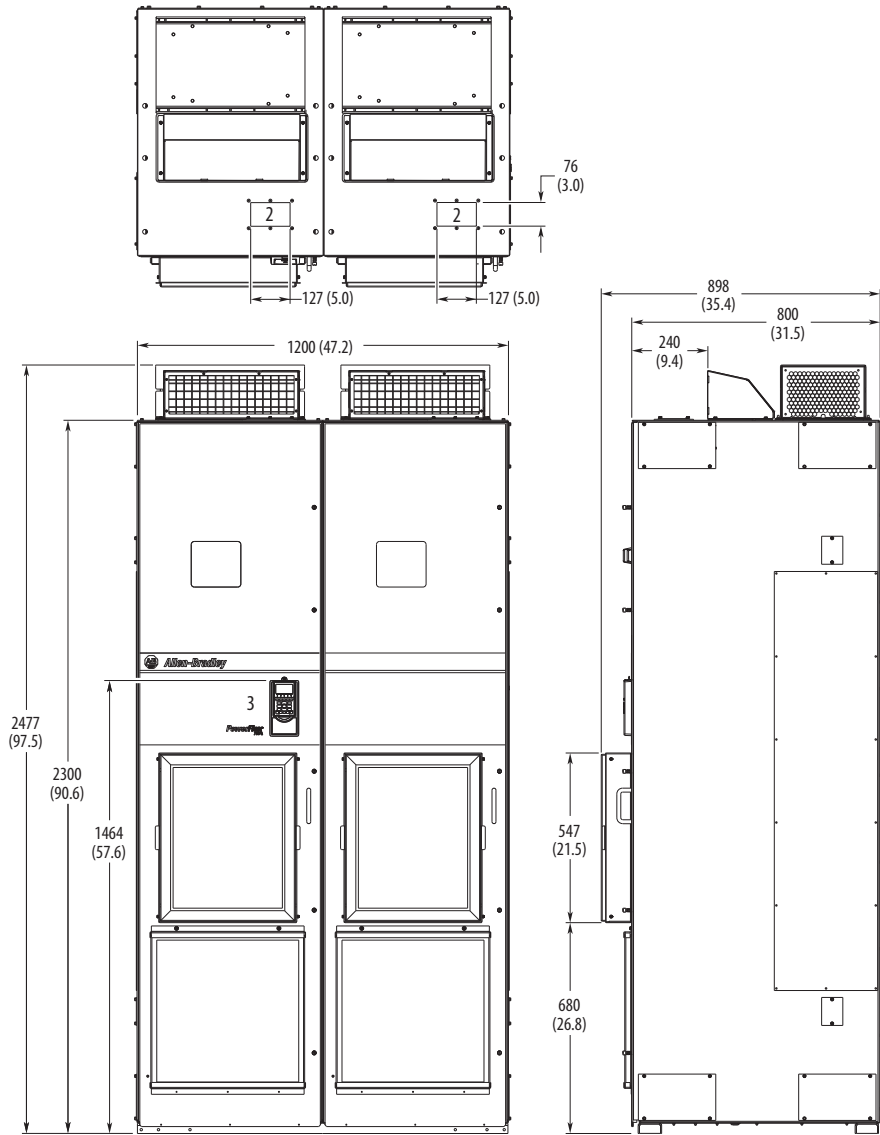
9

MCC Style Cabinet
with Cabinet Option
Bay and Wiring Bay,
800 mm (31.5 in.)
Deep
IP20, NEMA/UL Type 1
Enclosure Code L
(AC Input)
Enclosure Codes P, W
(DC Input)

No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.
5	Option bay disconnect switch access door.
6	Interlock override switch.

Frame Type **Approximate Dimensions – mm (in.)**

9 MCC Style Cabinet,
800 mm (31.5 in.)
Deep
IP54, NEMA 12
Enclosure Codes K, Y
(DC Input)
IP54, UL Type 12
Enclosure Code J
(AC Input)



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Optional HIM.

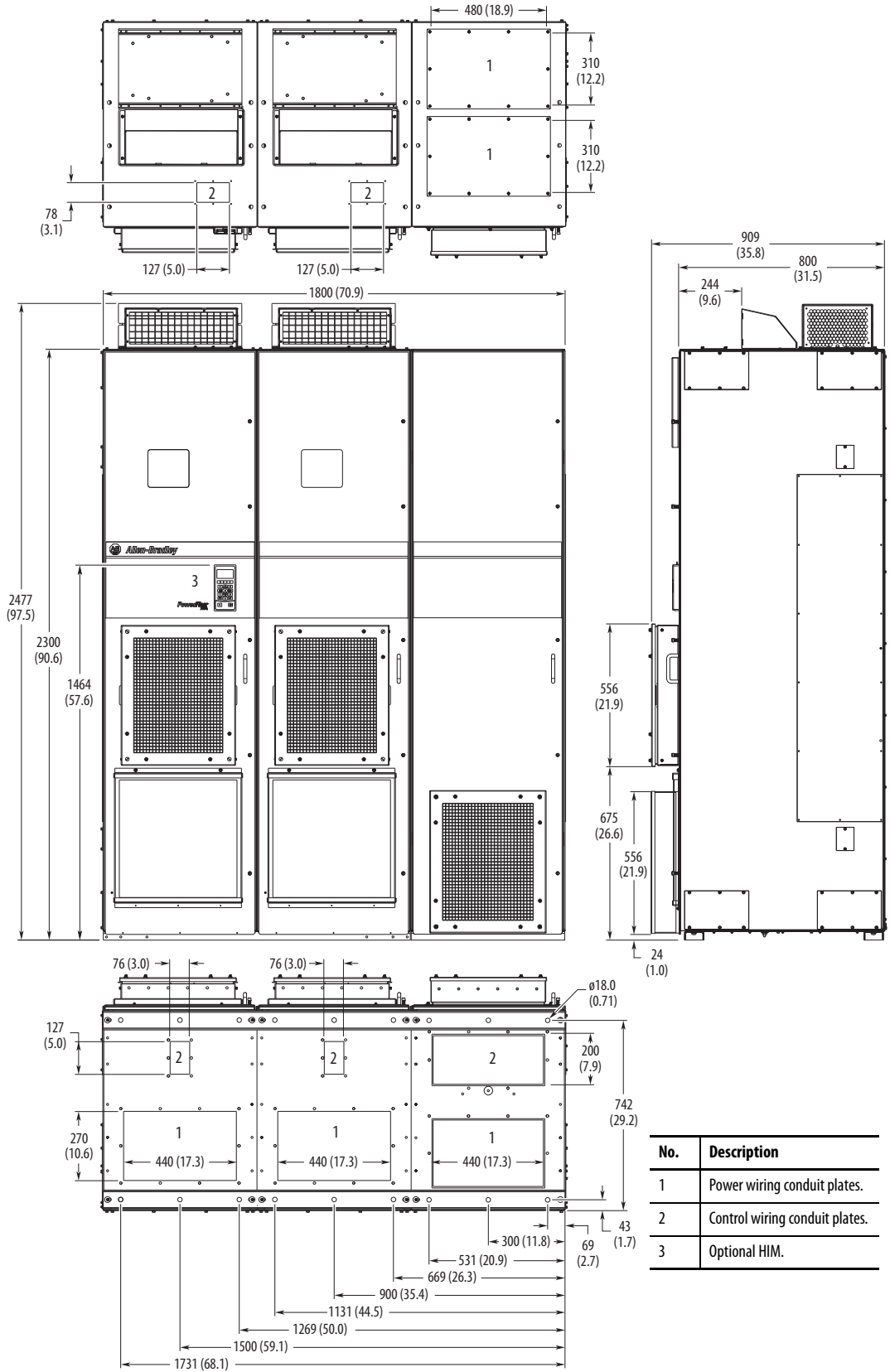
Frame

Type

Approximate Dimensions – mm (in.)

9

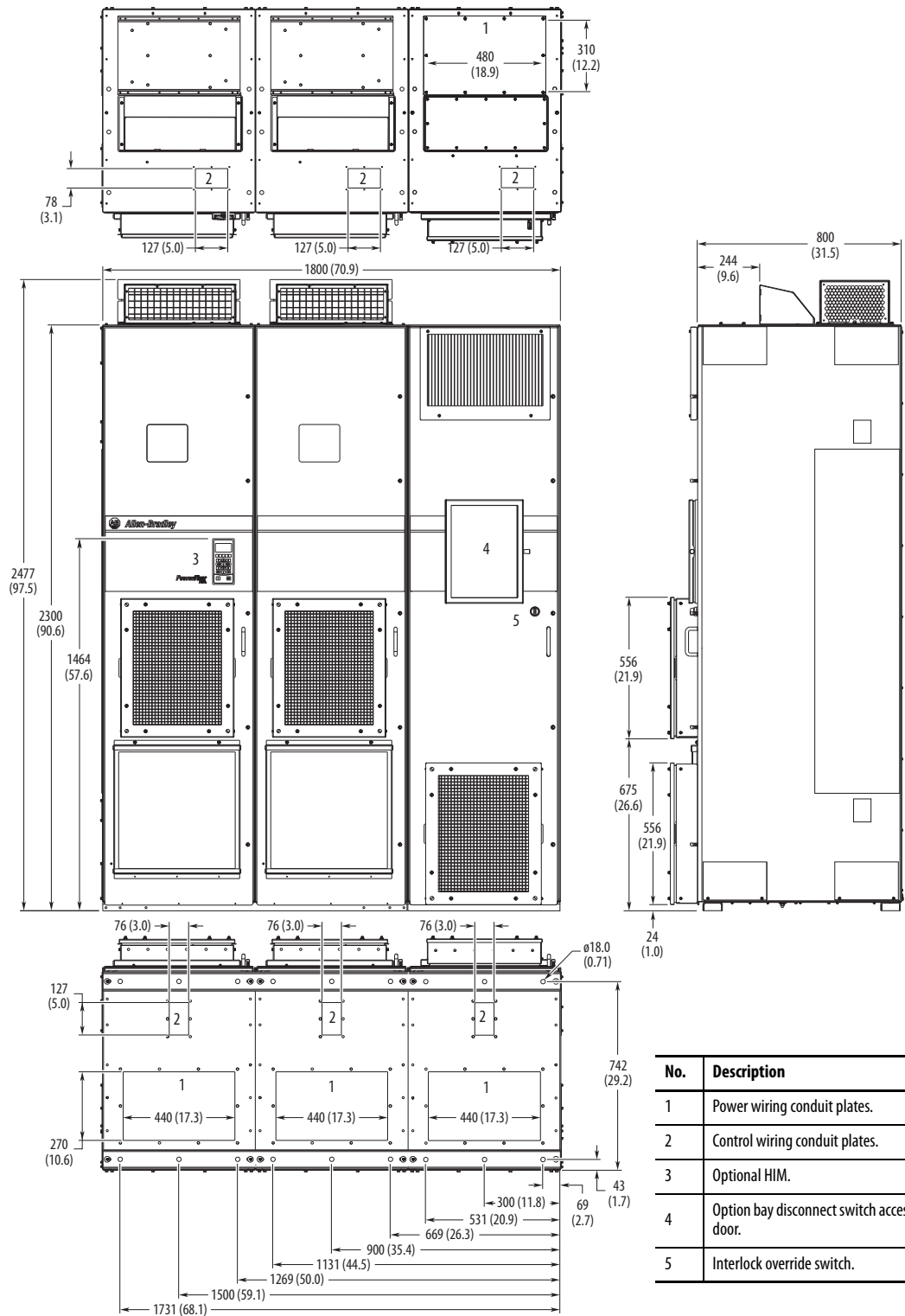
MCC Style Cabinet with Wiring Bay, 800 mm (31.5 in.) Deep
 IP54, NEMA 12
 Enclosure Codes K, Y
 IP54, UL Type 12
 Enclosure Code J



Frame

Type

Approximate Dimensions – mm (in.)



9

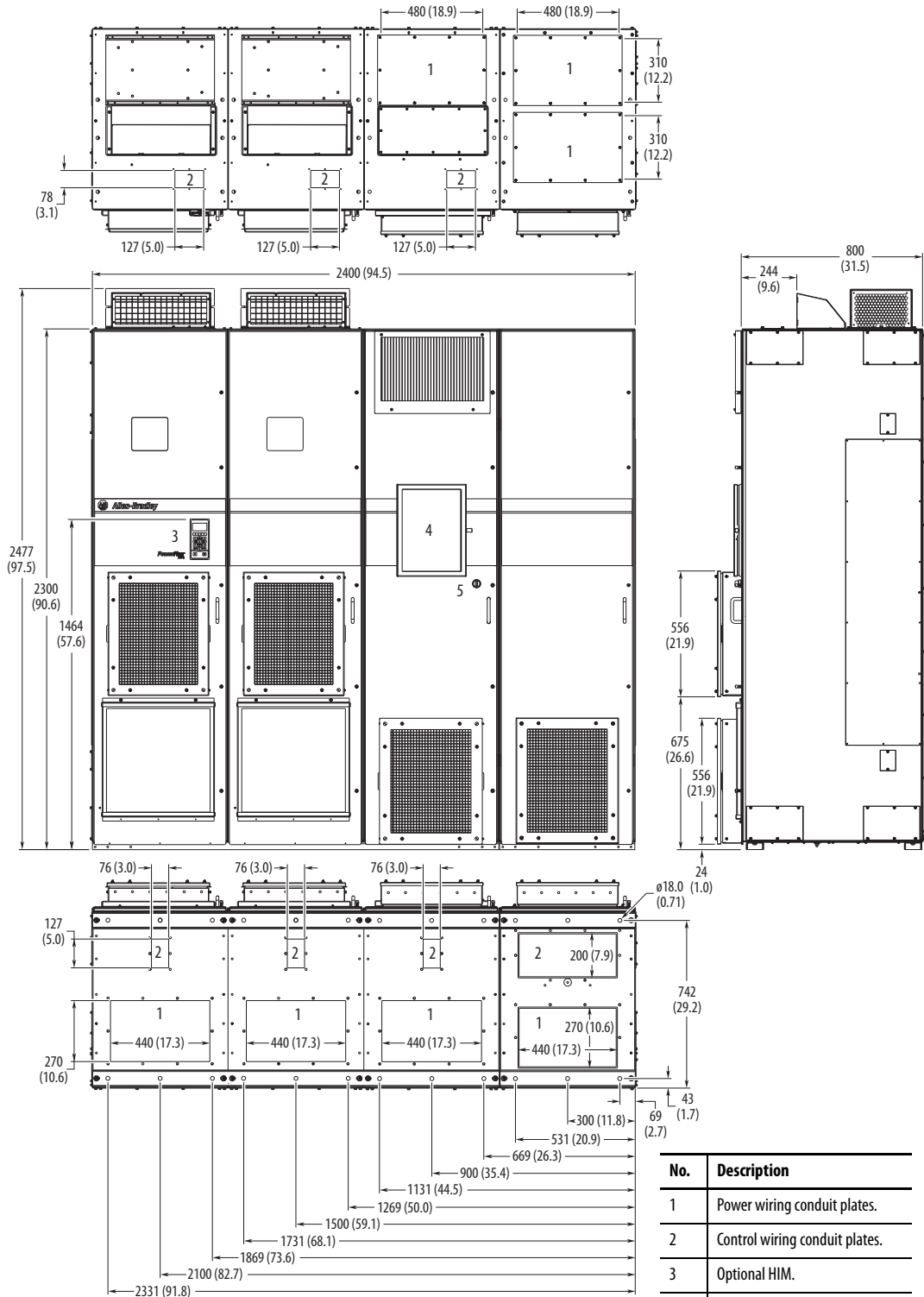
MCC Style Cabinet with Cabinet Option Bay, 800 mm (31.5 in.) Deep
 IP54, NEMA 12 Enclosure Codes K, Y
 IP54, UL Type 12 Enclosure Code J

No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Optional HIM.
4	Option bay disconnect switch access door.
5	Interlock override switch.

Frame

Type

Approximate Dimensions – mm (in.)



9

MCC Style Cabinet with Cabinet Option Bay and Wiring Bay, 800 mm (31.5 in.) Deep
 Deep
 IP54, NEMA 12
 Enclosure Codes K, Y
 IP54, UL Type 12
 Enclosure Code J

No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Optional HIM.
4	Option bay disconnect switch access door.
5	Interlock override switch.

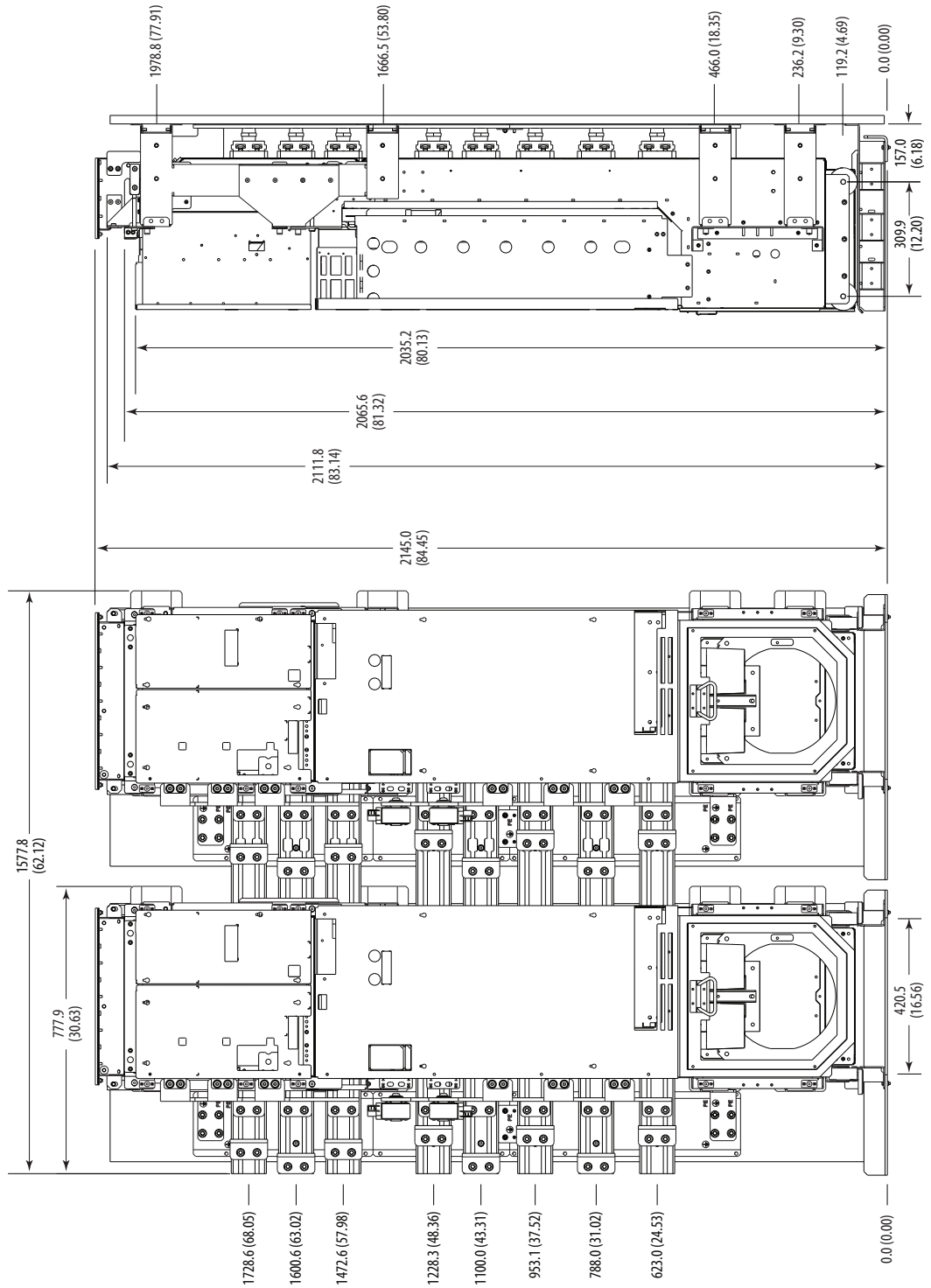
Frame

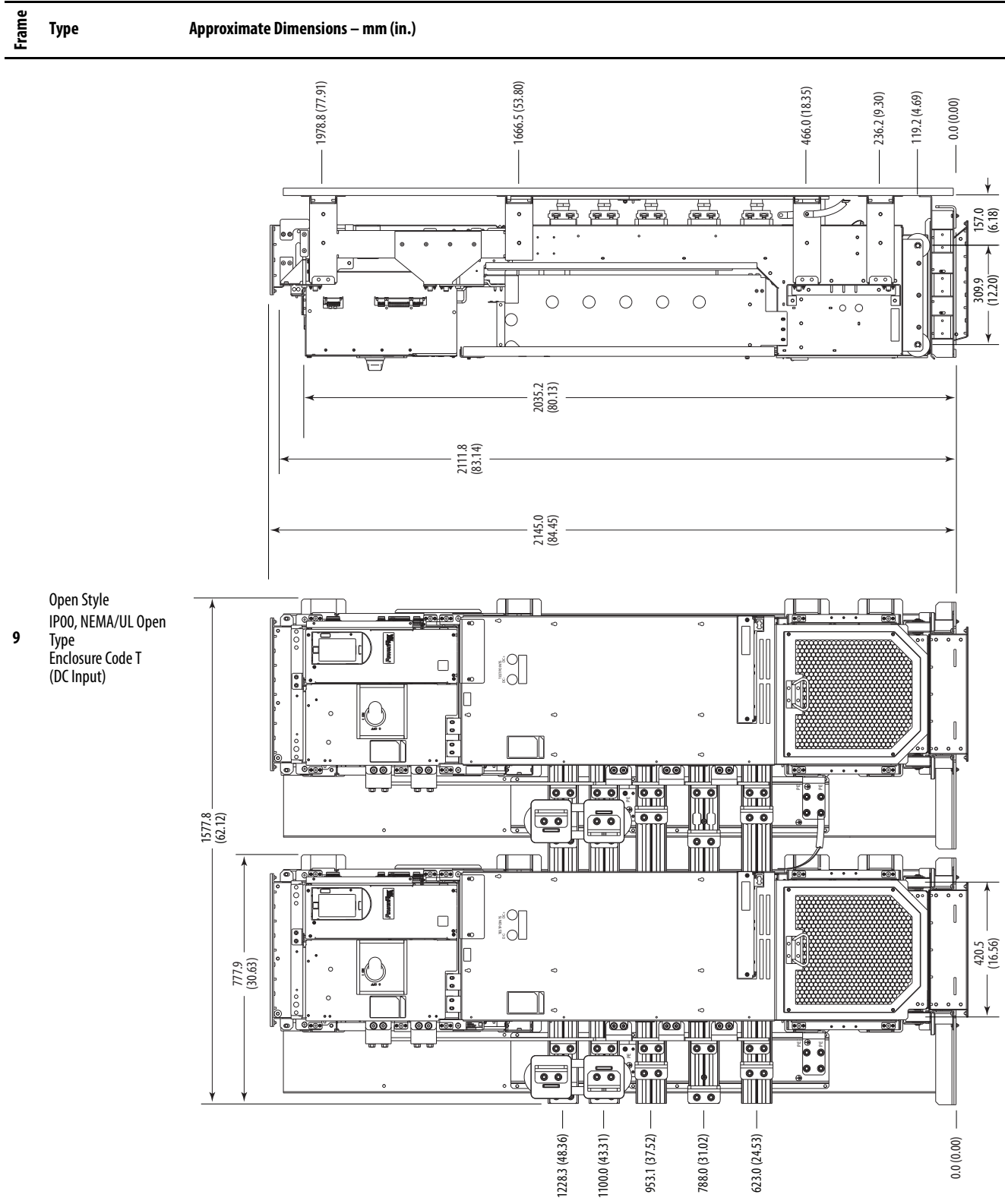
Type

Approximate Dimensions – mm (in.)

9

Open Style
IP00, NEMA/UL Open
Type
Enclosure Code T
(AC Input)

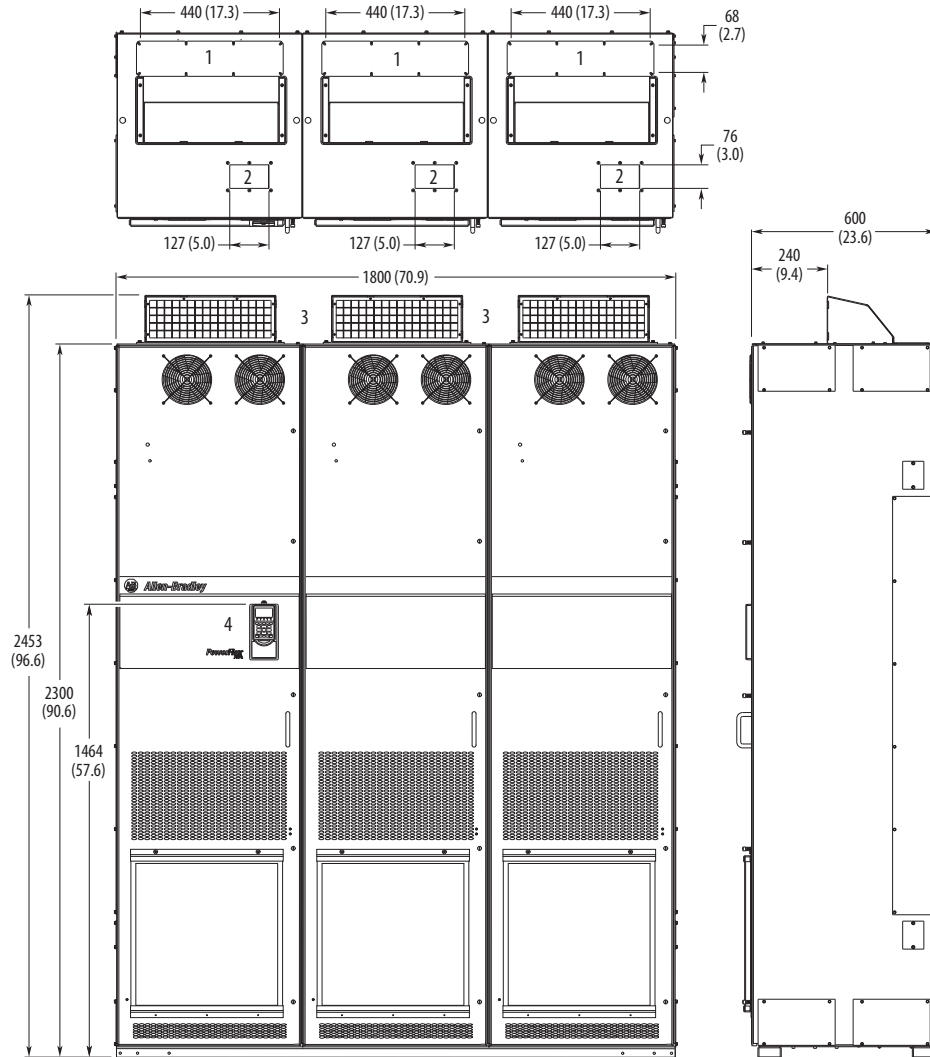




Frame

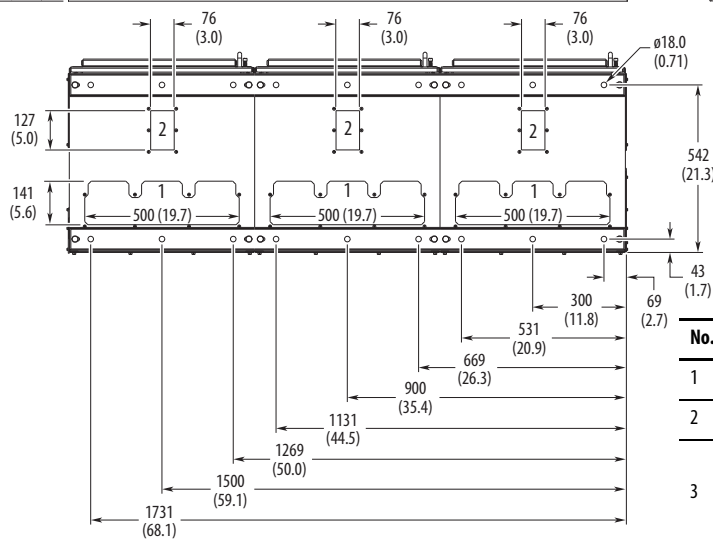
Type

Approximate Dimensions – mm (in.)



10

MCC Style Cabinet,
600 mm (23.6 in.)
Deep
IP20, NEMA/UL Type 1
Enclosure Code B



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Optional HIM.

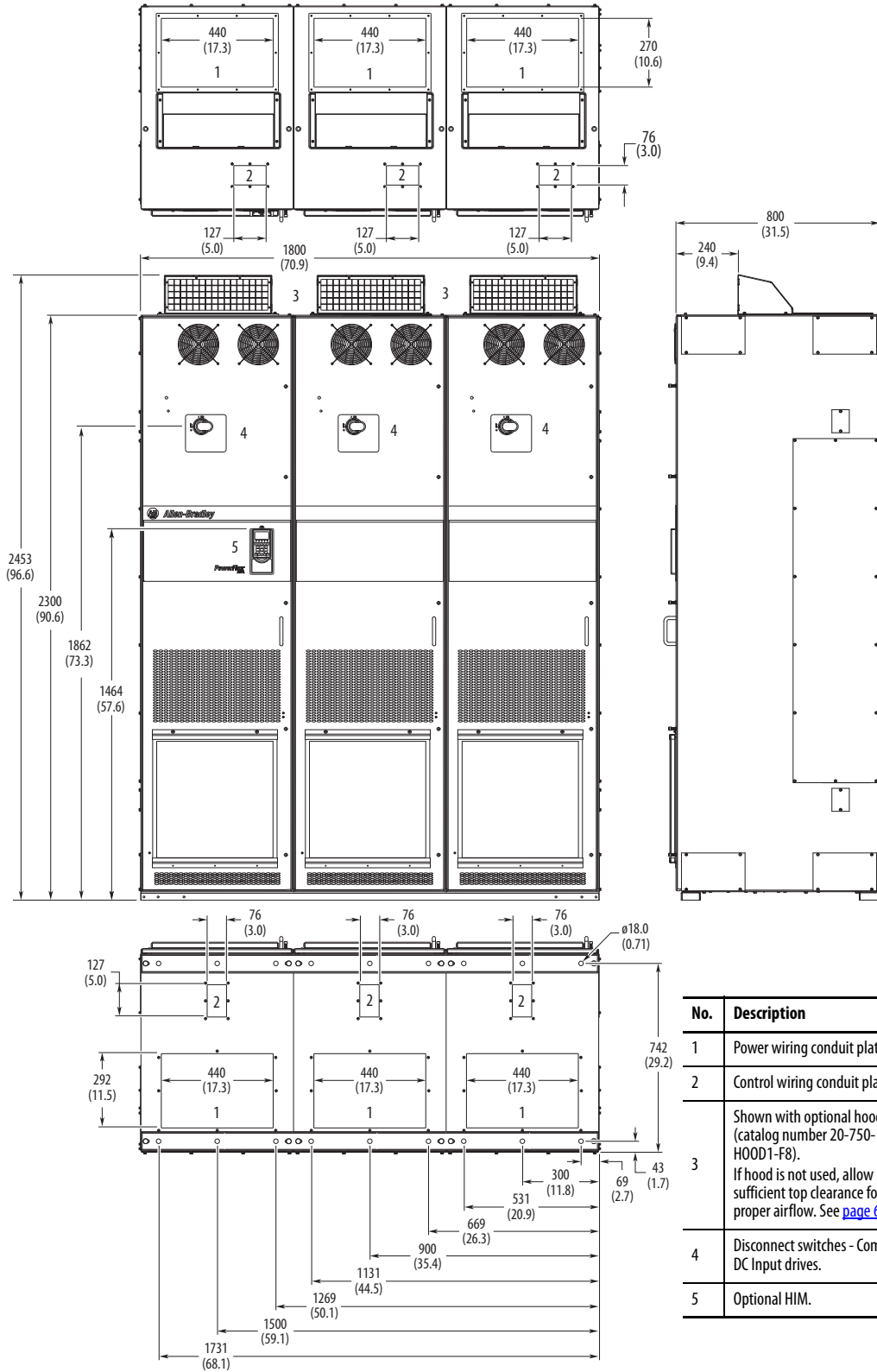
Frame

Type

Approximate Dimensions – mm (in.)

10

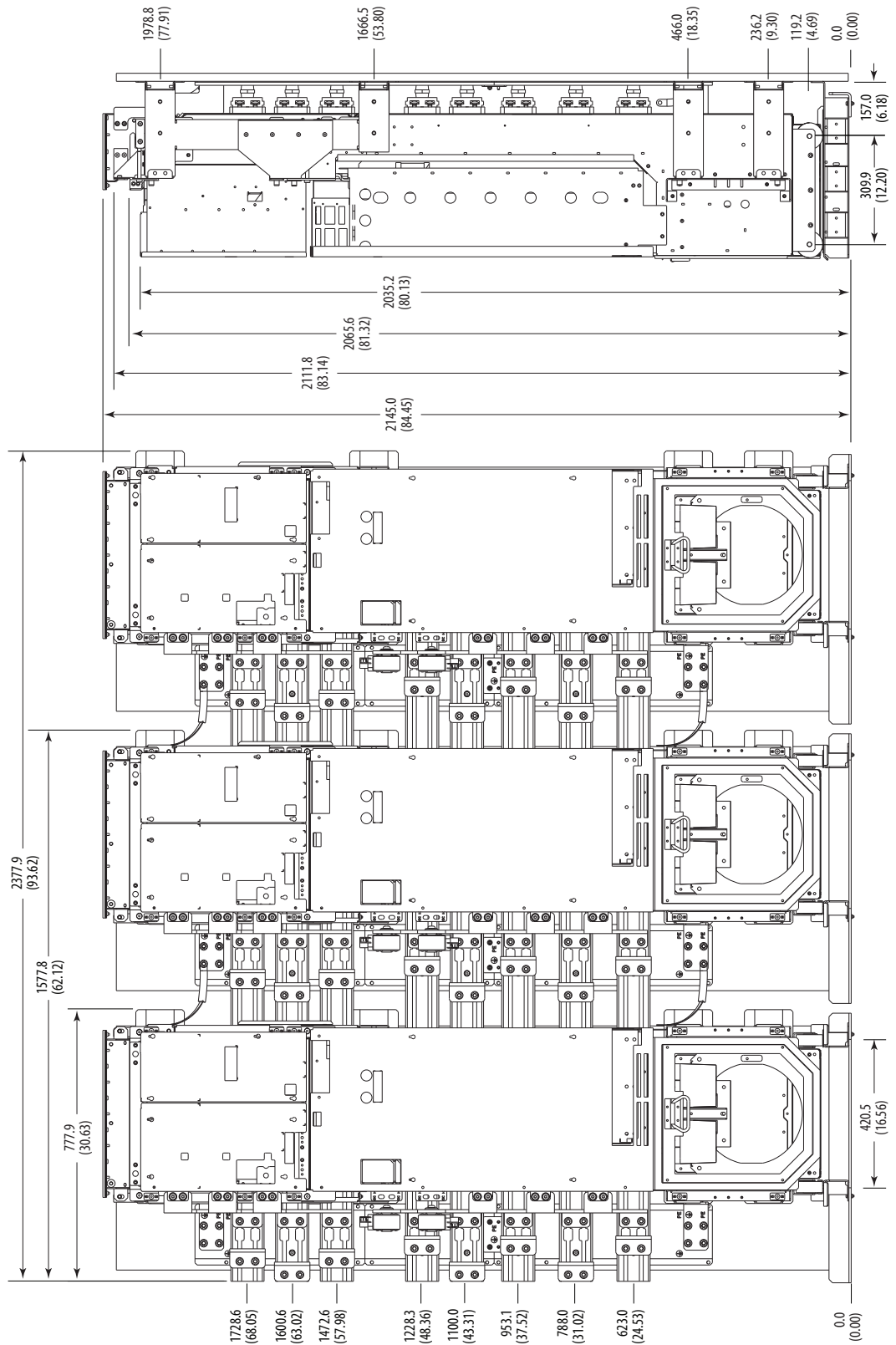
MCC Style Cabinet,
800 mm (31.5 in.)
Deep
IP20, NEMA/UL Type 1
Enclosure Code L
(AC Input)
Enclosure Codes P, W
(DC Input)



No.	Description
1	Power wiring conduit plates.
2	Control wiring conduit plates.
3	Shown with optional hood (catalog number 20-750-HOOD1-F8). If hood is not used, allow sufficient top clearance for proper airflow. See page 69 .
4	Disconnect switches - Common DC Input drives.
5	Optional HIM.

Frame Type **Approximate Dimensions – mm (in.)**

10 Open Style
 IP00, NEMA/UL Open
 Type
 Enclosure Code T
 (AC Input)



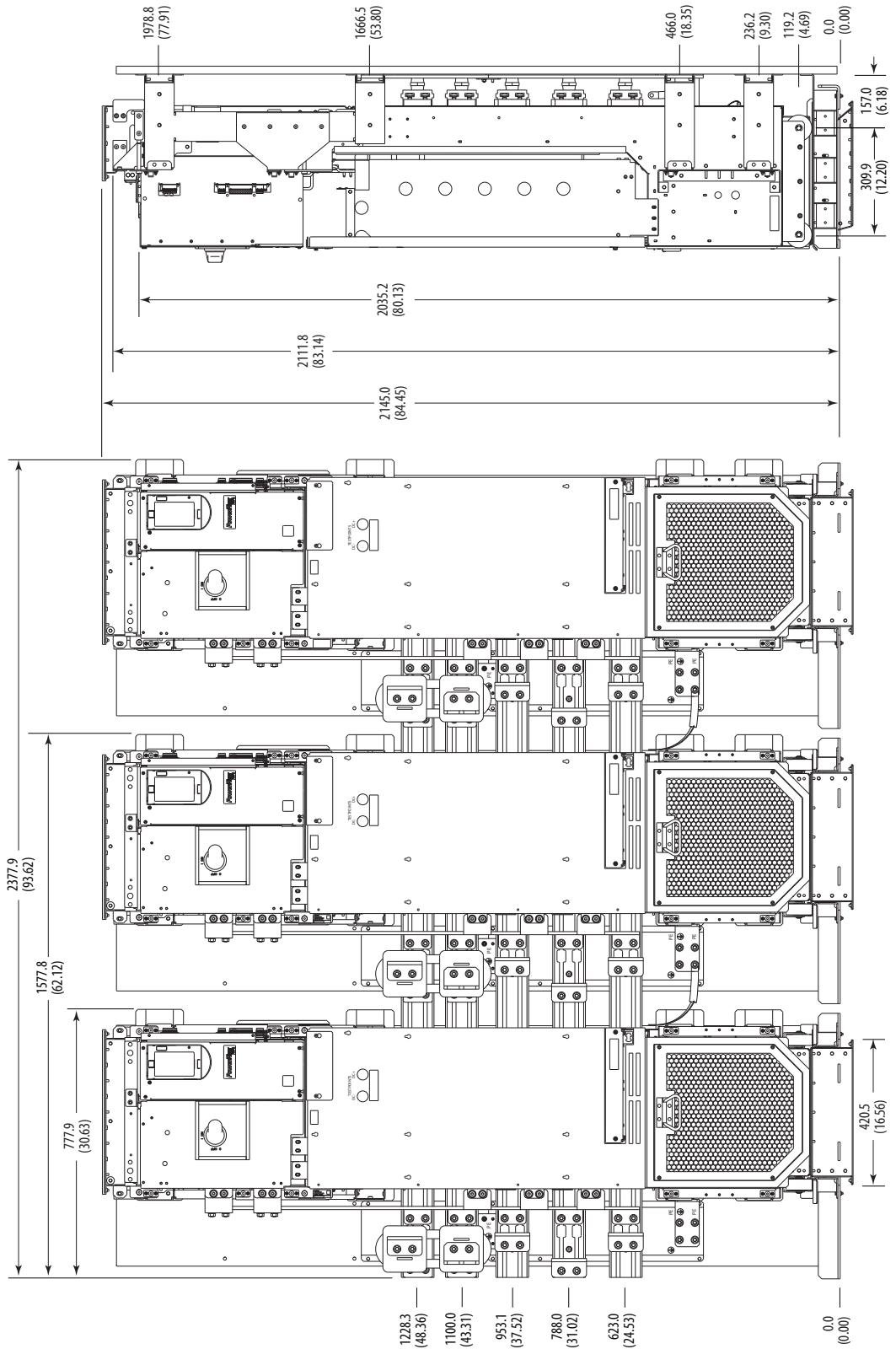
Frame

Type

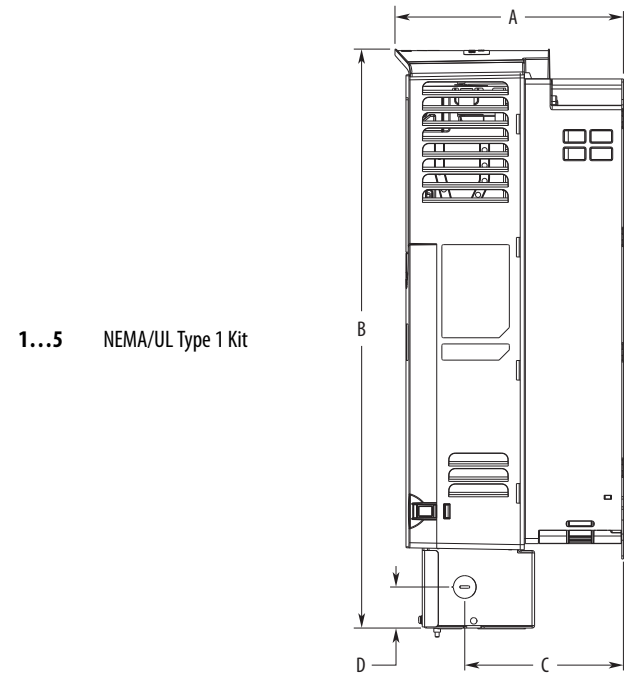
Approximate Dimensions – mm (in.)

10

Open Style
IP00, NEMA/UL Open
Type
Enclosure Code T
(DC Input)



Frame Type Approximate Dimensions – mm (in.)



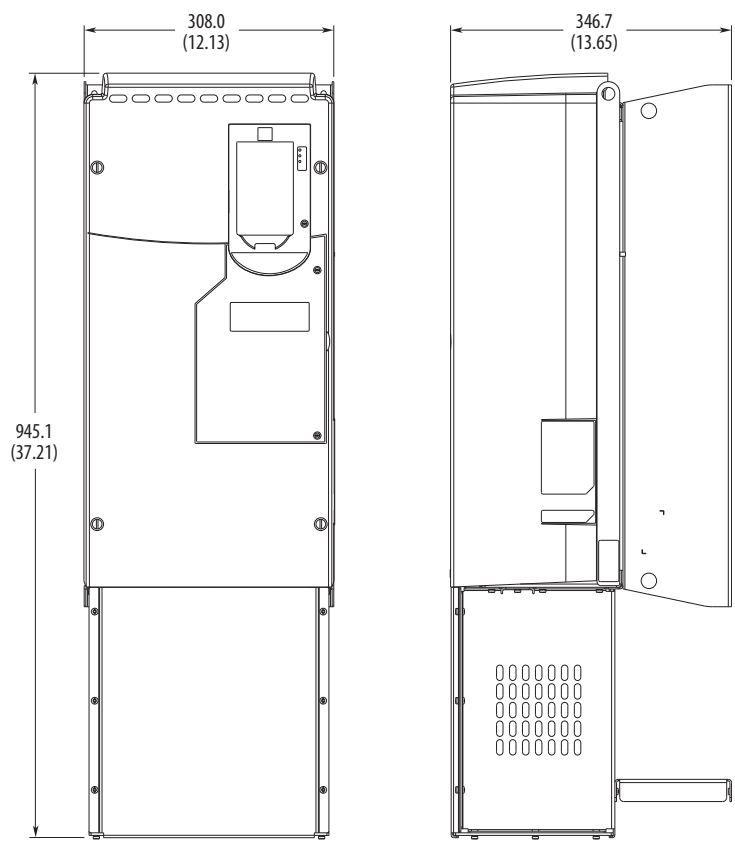
Frame 4 Shown

1...5 NEMA/UL Type 1 Kit

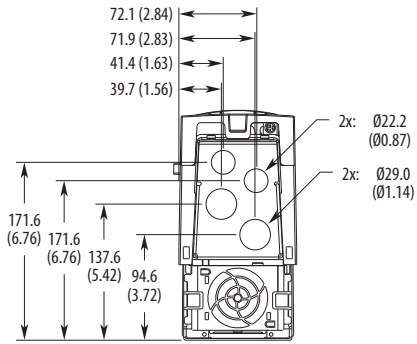
Frame	A	B	C	D
1	215.4 (8.48)	458.8 (18.06)	–	–
2	222.2 (8.75)	497.1 (19.57)	117.7 (4.63)	38.0 (1.50)
3	223.1 (8.78)	530.1 (20.87)	154.7 (6.09)	38.0 (1.50)
4	222.7 (8.77)	564.4 (22.22)	154.7 (6.09)	40.0 (1.57)
5	222.7 (8.77)	665.4 (26.20)	155.0 (6.10)	55.0 (2.17)

IMPORTANT: NEMA Type 1 Kits (20-750-NEMA-Fx) do not change the mounting dimensions.

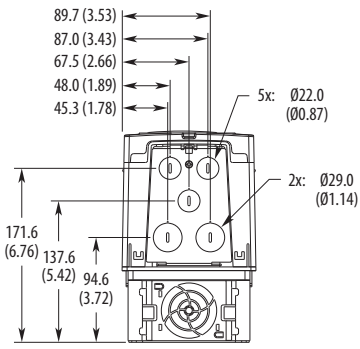
6 NEMA/UL Type 1 Kit



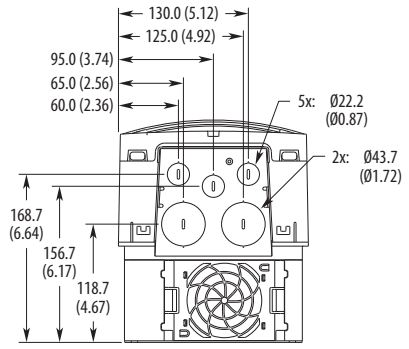
Frame Type Approximate Dimensions – mm (in.)



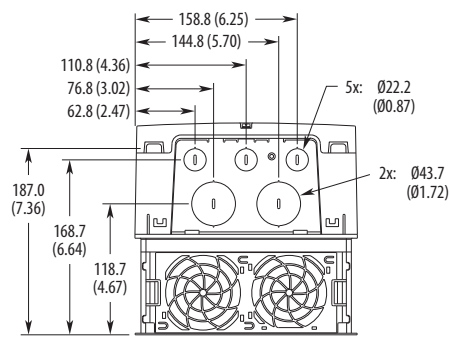
Frame 1



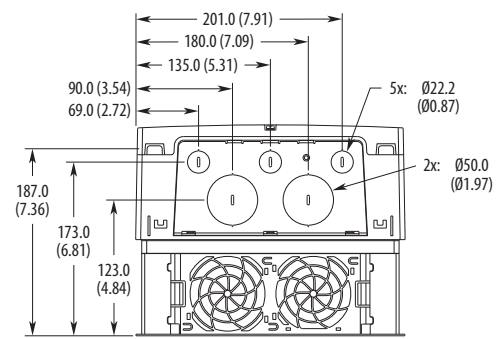
Frame 2



Frame 3



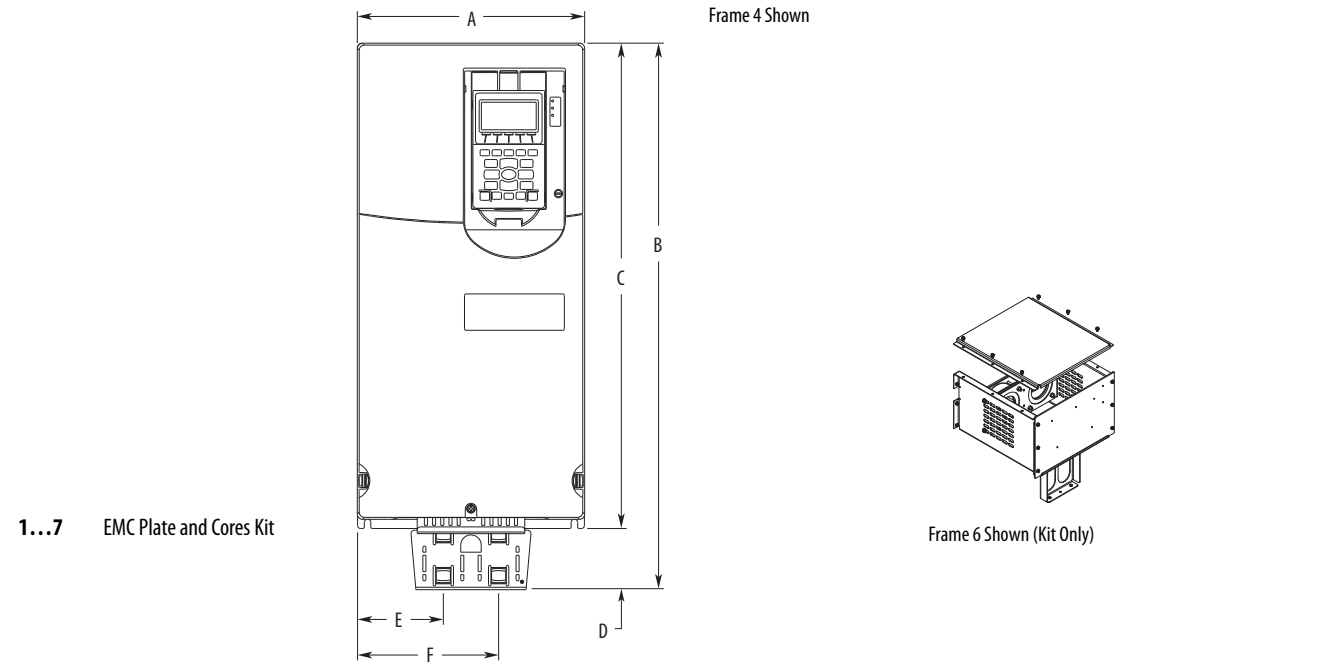
Frame 4



Frame 5

1...5 NEMA/UL Type 1 Bottom View

Frame Type Approximate Dimensions – mm (in.)



1...7 EMC Plate and Cores Kit

Frame 4 Shown

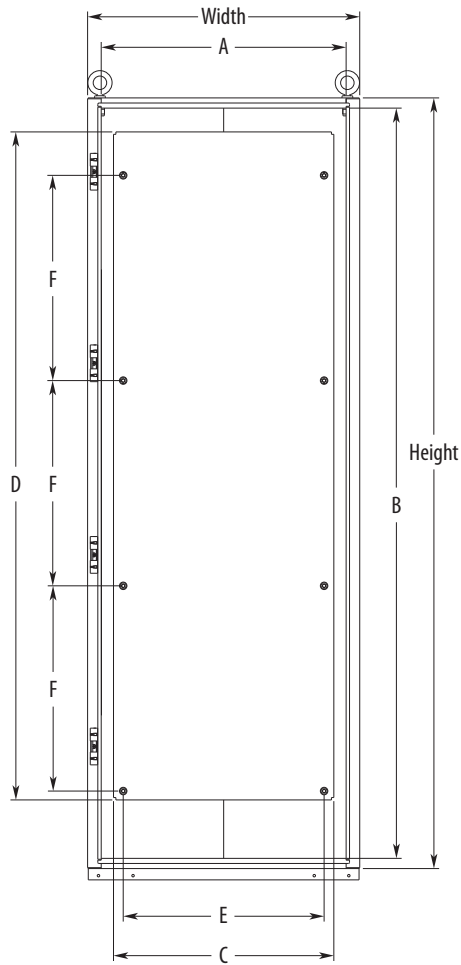
Frame 6 Shown (Kit Only)

Enclosures are shown without venting. Supplied enclosures have proper venting.

Frame	A	B	C	D	E	F
1	110.0 (4.33)	478.8 (18.85)	400.5 (15.77)	78.3 (3.08)	37.4 (1.47)	73.4 (2.89)
2	134.5 (5.30)	485.9 (19.13)	424.2 (16.70)	61.7 (2.43)	43.5 (1.71)	79.5 (3.13)
3	190.0 (7.48)	514.0 (20.24)	454.0 (17.87)	60.0 (2.36)	74.0 (2.91)	116.0 (4.57)
4	222.0 (8.74)	533.7 (21.01)	474.0 (18.66)	59.7 (2.35)	84.0 (3.31)	138.0 (5.43)
5	270.0 (10.63)	609.7 (24.00)	550.0 (21.65)	59.7 (2.35)	77.8 (3.06)	191.8 (7.55)

IMPORTANT: EMC Kits (20-750-EMCx-Fx) do not change the mounting dimensions. See the PowerFlex 750-Series EMC Plate and Cores Installation Instructions, publication [750-IN006](#), for detailed information on kit installation.

Frame	Type	Approximate Dimensions – mm (in.)
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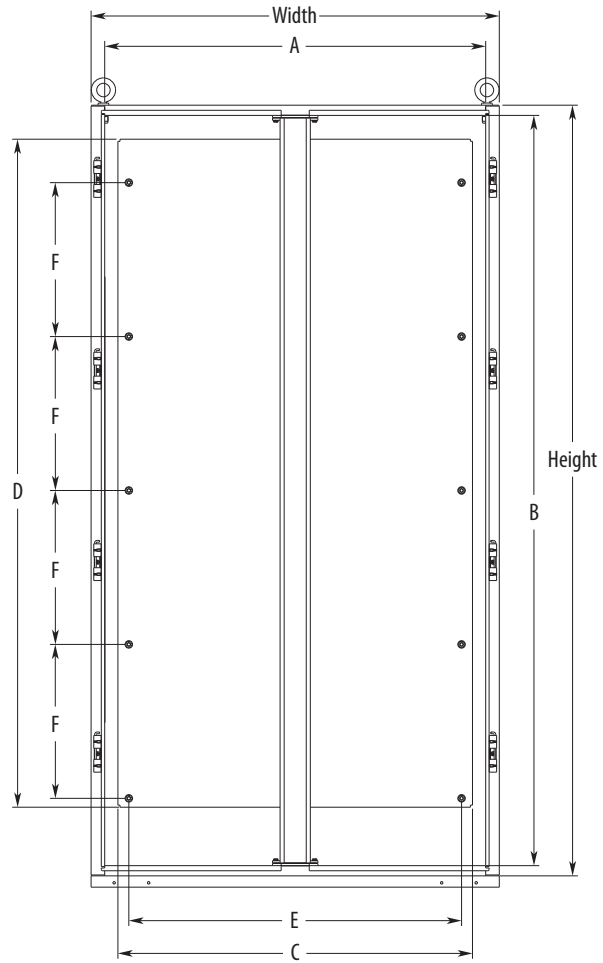


Power Option Cabinet
600 mm and 800 mm Wide

Cat. No.	Height	Width	Depth	A	B	C	D	E	F
20-750-PBAY-66	2265.5 (89.2)	600 (23.6)	600 (23.6)	520 (20.5)	2205.5 (86.8)	447.7 (17.6)	1963.7 (77.3)	390.5 (15.4)	603.3 (23.8)
20-750-PBAY-68	2265.5 (89.2)	600 (23.6)	800 (31.5)	520 (20.5)	2205.5 (86.8)	447.7 (17.6)	1963.7 (77.3)	390.5 (15.4)	603.3 (23.8)
20-750-PBAY-86	2265.5 (89.2)	800 (31.5)	600 (23.6)	720 (28.3)	2205.5 (86.8)	647.7 (25.5)	1963.7 (77.3)	590.5 (23.2)	603.3 (23.8)
20-750-PBAY-88	2265.5 (89.2)	800 (31.5)	800 (31.5)	720 (28.3)	2205.5 (86.8)	647.7 (25.5)	1963.7 (77.3)	590.5 (23.2)	603.3 (23.8)

See the PowerFlex 750-Series Power Option Cabinets Installation Instructions, publication [750-IN030](#), for details.

Frame	Type	Approximate Dimensions – mm (in.)
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Power Option Cabinet
1200 mm Wide

Cat. No.	Height	Width	Depth	A	B	C	D	E	F
20-750-PBAY-126	2265.5 (89.2)	1200 (47.2)	600 (23.6)	1120 (44.1)	2205.5 (86.8)	1042.3 (41.0)	1963.7 (77.3)	978.1 (38.5)	452.5 (17.8)
20-750-PBAY-128	2265.5 (89.2)	1200 (47.2)	800 (31.5)	1120 (44.1)	2205.5 (86.8)	1042.3 (41.0)	1963.7 (77.3)	978.1 (38.5)	452.5 (17.8)

See the PowerFlex 750-Series Power Option Cabinets Installation Instructions, publication [750-IN030](#), for details.

Drive Options

This section provides information for the drive options.

Human Interface Modules

This section provides information for the human interface modules.



Blank Plate

20-HIM-A6

20-HIM-C6S

Cat. No.	Description
20-HIM-A0	No HIM (blank plate)
20-HIM-A6	Enhanced, LCD, full numeric, handheld/local, NEMA Type 1
20-HIM-C6S	Enhanced, LCD, full numeric, IP66 NEMA Type 4X/12 (for indoor use only) ⁽¹⁾

(1) Includes a 3 m (9.8 ft) catalog number 1202-C30 interface cable for connection to drive.

Human Interface Modules Specifications

Attribute	20-HIM-A6 ⁽¹⁾	20-HIM-C6S ⁽¹⁾
Drive Protocol Data rates	Drive Peripheral Interface (DPI™) 125 Kbps or 500 Kbps	
Consumption Drive (DPI)	140 mA at 12V DC supplied by the host drive	
Dimensions, H x W x D 20-HIM-A6 20-HIM-C6S	116 x 70 x 16 mm (4.57 x 2.75 x 0.63 in.) 180 x 93 x 25 mm (7.08 x 3.66 x 0.98 in.)	
Weight	91 g (3.2 oz)	173 g (5.7 oz)
Temperature Operating Storage	0...50 °C (32...122 °F) -40...+85 °C (-40...+185 °F)	
Relative humidity	5...95% noncondensing	
Atmosphere	IMPORTANT: Do not install the module in an area where the ambient atmosphere contains volatile or corrosive gas, vapors, or dust. If the module is not going to be installed right away, store the module in an area where it is not exposed to a corrosive atmosphere.	
UV radiation	The HIM is not UV rated.	
Vibration Operating Nonoperating	2.5 G at 5...2000 Hz 5 G at 5...2000 Hz	
Shock Operating Nonoperating	30 G peak acceleration, 11 (±1) ms pulse width 50 G peak acceleration, 11 (±1) ms pulse width	
UL C-UL CE C-Tick FCC ID IC	UL508C CAN / CSA C22.2 No. 14 EN61800-3 EN61800-3 — —	

(1) **IMPORTANT:** These HIMs are a product of category C2 according to IEC 61800-3. In a domestic environment, this product can cause radio interference in which case supplementary mitigation measures can be required.

Human Interface Module Accessories

Cat. No.	Description
20-HIM-B1	Bezel kit for LCD HIMs, NEMA Type 1 ⁽¹⁾
20-HIM-H10	PowerFlex HIM interface cable, 1 m (39 in.) ⁽²⁾
1202-C03 1202-C10 1202-C30 1202-C90	Comm option cable kit (male-male) 0.33 m (1.1 ft) 1 m (3.3 ft) 3 m (9.8 ft) 9 m (29.5 ft)
1202-H03 1202-H10 1202-H30 1202-H90	Cable kit (male-female) ⁽³⁾ 0.33 m (1.1 ft) 1 m (3.3 ft) 3 m (9.8 ft) 9 m (29.5 ft)
1202-CBL-KIT-100M	DPI cable kit with connectors, tools, and 100 m (328 ft) cable
1202-TB-KIT-SET	DPI cable connector kit
1203-S03	DPI/SCANport™ one-to-two-port splitter cable

(1) Includes a 3 m (9.8 ft) catalog number 1202-C30 interface cable for connection to drive.

(2) Required only when HIM is used as hand-held or remote.

(3) Required with catalog number 20-HIM-H10 for distances up to a total maximum of 10 m (32.8 ft).

Communication Option Kits and Accessories

This section provides information for communication option kits and accessories.

Communication Option Kits and Accessories

Cat. No.	Description (see page 128 for specifications)
20-750-BNETIP	BACnet/IP option module
20-750-CNETHC	Coaxial ControlNet option module
20-COMM-C ⁽¹⁾	ControlNet communication adapter (coax)
20-750-DNET	DeviceNet option module
20-COMM-D ⁽¹⁾	DeviceNet communication adapter
20-750-ENETR	Dual-port EtherNet/IP option module
20-COMM-E ⁽¹⁾	EtherNet/IP communication adapter
20-COMM-H ⁽¹⁾	HVAC communication adapter (only Modbus RTU can be used)
20-COMM-K ⁽¹⁾	CANopen communication adapter
20-COMM-L ⁽¹⁾	LonWorks communication adapter
20-COMM-M ⁽¹⁾	Modbus/TCP communication adapter
20-750-PBUS	PROFIBUS DPV1 option module
20-750-PNET	Single-port Profinet I/O option module
20-750-PNET2P	Dual-port Profinet I/O option module
20-COMM-P ⁽¹⁾	PROFIBUS DP communication adapter
20-COMM-Q ⁽¹⁾	ControlNet communication adapter (fiber)
20-COMM-R ^{(1) (2)}	Remote I/O communication adapter
20-COMM-S ⁽¹⁾	RS-485 DF1 communication adapter
20-XCOMM-AC-PS1	External communication kit power supply
20-XCOMM-DC-BASE	DPI external communication kit ⁽³⁾
20-XCOMM-IO-OPT1	External DPI I/O option board ⁽⁴⁾

Communication Option Kits and Accessories (Continued)

Cat. No.	Description (see page 128 for specifications)
1769-SM1	Compact I/O™ module (3-channel)
1203-SNM	Serial null modem adapter
1203-SSS	Smart Self-powered serial converter (RS-232) includes 1203-SFC and 1202-C10 cables
1203-USB	Universal serial bus (USB) converter includes 2 m (6.6 ft) USB, 20-HIM-H10, and 22-HIM-H10 cables
1786-TPS	ControlNet T-tap straight
20-750-20COMM-F1	Communication carrier card for PowerFlex 750-Series Frame 1 drives
20-750-20COMM	Communication carrier card for PowerFlex 750-Series Frame 2 or higher drives

(1) Requires a communication carrier card (catalog number 20-750-20COMM or 20-750-COMM-F1). See [page 127](#) for compatibility details.

(2) This item has [End of Life](#) status.

(3) Only compatible with the following communication options: catalog number 20-COMM-E EtherNet/IP; 20-COMM-C ControlNet (coax); 20-COMM-Q ControlNet (fiber); 20-COMM-D DeviceNet (Series B or later); and 20-COMM-M Modbus/TCP.

(4) For use only with DPI external communications kit, catalog number 20-XCOMM-DC-BASE.

RevisionVersionPowerFlex 755 System Resource Allocation

Some drive configurations that use certain communication options can exceed the available resources of the processor on the main control board. This issue is a consideration for PowerFlex 755 drives with firmware revision 2.000 (or later). See the PowerFlex 750-Series Programming Manual, publication [750-PM001](#), for details.

PowerFlex 750-Series Legacy Communication Options

Most legacy communication adapters (20-COMM) can be used with the PowerFlex 755 drives (with these restrictions):

- **Frame 1** - We recommend that you install catalog number 20-750-20COMM-F1 communication carrier card in port 4. Port 5 is not accessible when this module is installed.
- **Frames 2 and larger** - We recommend that you install catalog number 20-750-20COMM communication carrier card in port 6. If you use port 4 or 5, the adjacent left port is inaccessible to other option modules and can interfere with network cable connections. For details, contact Rockwell Automation technical support.

Adapter		Accesses Ports 0...6 for I/O Connections (implicit and Explicit Messaging)	Accesses Ports 7 and Higher (I/O, Explicit Messaging)	Supports Drive Add-on Profiles	Supports Asian Languages ⁽⁶⁾
Cat. No.	Type				
20-COMM-B	BACnet MS/TP	Not compatible			
20-COMM-C	ControlNet (Coax)	Revision 3.001 ⁽⁴⁾	Revision 3.001 ⁽⁴⁾	See footnote ⁽⁵⁾	Revision 3.001 ⁽⁴⁾
20-COMM-D	DeviceNet	See footnote ⁽²⁾	Not compatible		
20-COMM-E	EtherNet/IP	Revision 4.001 ⁽⁴⁾	Revision 4.001 ⁽⁴⁾	See footnote ⁽⁵⁾	Revision 4.001 ⁽⁴⁾
20-COMM-H	RS-485 HVAC	Revision 2.009 ⁽³⁾⁽⁴⁾	Not compatible		
20-COMM-K	CANopen	Revision 1.001 ⁽⁴⁾			
20-COMM-L	LonWorks	Revision 1.007 ⁽⁴⁾			
20-COMM-M	Modbus/TCP	Revision 2.001 ⁽⁴⁾	Revision 2.001 ⁽⁴⁾	Not compatible	Revision 2.001 ⁽⁴⁾
20-COMM-P	PROFIBUS DP	Revision 1.006 ⁽⁴⁾	Revision 1.006 ⁽⁴⁾		Not compatible
20-COMM-Q	ControlNet (Fiber)	Revision 3.001 ⁽⁴⁾	Revision 3.001 ⁽⁴⁾	See footnote ⁽⁵⁾	Revision 3.001 ⁽⁴⁾
20-COMM-R ⁽¹⁾	Remote I/O	See footnote	Not compatible		
20-COMM-S	RS-485 DF1	See footnote			

(1) This item has [End of Life](#) status.

(2) Controller must be able to read/write 32-bit floating point (REAL) values.

(3) Supports all three modes of operation (RTU, P1, and N2).

(4) Requires this adapter firmware revision or higher.

(5) Requires firmware revision 1.05 or later of the drive Add-on Profiles for Studio 5000 Logix Designer application.

(6) Chinese, Japanese, and Korean languages are supported at the time of publication.

Environmental Specifications – Communication Modules

Attribute	Description
Temperature Operating Storage	-10...+50 °C (14...122 °F) -40...+85 °C (-40...+185 °F)
Relative humidity	5...95% noncondensing
Atmosphere	IMPORTANT: Do not install the module in an area where the ambient atmosphere contains volatile or corrosive gas, vapors, or dust. If the module is not going to be installed right away, store the module in an area where it is not exposed to a corrosive atmosphere.

Communication Options and Accessories Specifications

Attribute	20-750-BNETIP	20-750-CNETC	20-COMM-C	20-750-DNET	20-COMM-D	20-750-ENETR	20-COMM-E
Network Protocol Data rate	BACnet/IP 10/100 Mbps	ControlNet 5 Mbps (fixed)	ControlNet 5 Mbps	DeviceNet 125 Kbps, 250 Kbps, and 500 Kbps	DeviceNet 125 Kbps, 250 Kbps, and 500 Kbps	EtherNet/IP 10/100 Mbps, Half/Full Duplex	EtherNet/IP 10/100 Mbps, Half/Full Duplex
Drive Protocol Data rates	DPI 500 Kbps	DPI 500 Kbps	DPI 125 Kbps or 500 Kbps	DPI 500 Kbps	DPI 125 Kbps or 500 Kbps	DPI 500 Kbps	DPI 125 Kbps or 500 Kbps
Consumption Drive (DPI) Network	250 mA at 14V DC None	250 mA at 14V DC None	275 mA at 5V DC None	50 mA at 14V DC 60 mA at 24V DC	150 mA at 5V DC 60 mA at 24V DC	250 mA at 14V DC None	370 mA at 5V DC N/A
Dimensions H x L x W mm (in)	16.0 x 130.0 x 83.0 (0.63 x 5.12 x 3.27)	68.0 x 150.0 x 26.0 (2.70 x 5.90 x 1.00)	16.0 x 103.0 x 80.0 (0.63 x 4.00 x 3.13)	68.0 x 150.0 x 26.0 (2.70 x 5.90 x 1.00)	19.0 x 86.0 x 78.5 (0.75 x 3.39 x 3.09)	68.0 x 150.0 x 26.0 (2.70 x 5.90 x 1.00)	19.0 x 86.0 x 78.5 (0.75 x 3.39 x 3.09)
Weight g (oz)	60 (2.0)	62 (2.1)	85 (3.0)	62 (2.1)	85 (3.0)	62 (2.1)	85 (3.0)
Compliance UL C-UL CE C-Tick	UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-5-1, EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-5-1, EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-5-1, EN61800-3 EN61800-3

Communication Options and Accessories Specifications (continued)

Attribute	20-COMM-H	20-COMM-K	20-COMM-L	20-COMM-M	20-750-PBUS	20-750-PNET 20-750-PNET2P	20-COMM-P
Network Protocol Data rate	Modbus RTU, Metasys N2, or Siemens P1 FLN RTU: 4800...38400 bps N2: 9600 bps P1: 4800 bps or 9600 bps	CANopen 10 Kbps...1 Mbps	LonWorks 78 Kbps	Modbus/TCP 10/100 Mbps, Half/Full Duplex	PROFIBUS 9600 bps...12 Mbps (autobauds)	Profinet 10/100 Mbps	PROFIBUS 10 Kbps...12 Mbps
Drive Protocol Data rates	DPI 125 Kbps or 500 Kbps	DPI 125 Kbps or 500 Kbps	DPI 125 Kbps or 500 Kbps	DPI 125 Kbps or 500 Kbps	DPI 500 Kbps	DPI 500 Kbps	DPI 125 Kbps or 500 Kbps
Consumption Drive (DPI) Network	150 mA at 5V DC N/A	500 mA at 5V DC None	200 mA on DPI N/A	350 mA at 5V DC N/A	250 mA at 14V DC None	250 mA at 14V DC None	370 mA at 5V DC N/A

Communication Options and Accessories Specifications (continued)

Attribute	20-COMM-H	20-COMM-K	20-COMM-L	20-COMM-M	20-750-PBUS	20-750-PNET 20-750-PNET2P	20-COMM-P
Dimensions H x L x W mm (in)	19.0 x 86.0 x 78.5 (0.75 x 3.39 x 3.09)	19.0 x 86.0 x 78.5 (0.75 x 3.39 x 3.09)	20.0 x 86.0 x 78.5 (0.79 x 3.39 x 3.09)	19.0 x 86.0 x 78.5 (0.75 x 3.39 x 3.09)	16.0 x 130.0 x 83.0 (0.63 x 5.12 x 3.27)	16.0 x 130.0 x 83.0 (0.63 x 5.12 x 3.27)	19.0 x 86.0 x 78.5 (0.75 x 3.39 x 3.09)
Weight g (oz)	85 (3.0)	85 (3.0)	85 (3.0)	85 (3.0)	57 (2.0)	60 (2.0)	57 (2.0)
Compliance UL C-UL CE C-Tick	UL508C CAN/CSA C22.2 No. 14 EN61800-5-1, EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 — —	UL508C — — —	UL508C CAN/CSA C22.2 No. 14 EN61800-5-1, EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No.14 IEC61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 — —

Communication Options and Accessories Specifications (continued)

Attribute	20-COMM-Q	20-COMM-R ⁽¹⁾	20-COMM-S	1203-SSS	1203-USB	1769-SM1
Network Protocol Data rate	ControlNet 5 Mbps	Remote I/O 57.6 Kbps, 115.2 Kbps, or 230.4 Kbps	DF1 1200...38400 bps	DF1 9600...38400 bps	Universal Serial Bus (USB) 115.2 Kbps	—
Drive Protocol Data rates	DPI 125 Kbps or 500 Kbps	DPI 125 Kbps or 500 Kbps	DPI 125 Kbps or 500 Kbps	DPI or SCANport™ 125 Kbps or 500 Kbps (only DPI)	SCANport, DPI, or DSI 125, 125/500, 19.2 Kbps	DPI or SCANport 125 Kbps or 500 Kbps (only DPI)
Consumption Drive (DPI) Network	275 mA at 5V DC N/A	250 mA at 5V DC N/A	150 mA at 5V DC N/A	130 mA at 12V DC N/A	130 mA at 12V DC 170 mA at +5V DC (DSI)	Module: 280 mA at 5V DC Channel: 60 mA at 12V DC
Dimensions H x L x W mm (in)	16.0 x 103.0 x 80.0 (0.63 x 4.00 x 3.13)	19.0 x 86.0 x 78.5 (0.75 x 3.39 x 3.09)	16.0 x 86.0 x 81.0 (0.63 x 3.34 x 3.16)	103.5 x 73.4 x 23.6 (4.08 x 2.89 x 0.93)	103.5 x 73.4 x 23.6 (4.08 x 2.89 x 0.93)	103.5 x 73.4 x 23.6 (4.08 x 2.89 x 0.93)
Weight g (oz)	85 (3.0)	85 (3.0)	60 (2.0)	71 (2.5)	71 (2.5)	71 (2.5)
Compliance UL C-UL CE C-Tick	UL508C CAN/CSA C22.2 No. 14 EN61800-5-1, EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 EN61800-5-1, EN61800-3 EN61800-3	UL508C CAN/CSA C22.2 No. 14 — —	UL508C CAN/CSA C22.2 No. 14 — —

(1) This item has [End of Life](#) status.**Communication Options and Accessories Specifications (continued)**

Attribute	20-XCOMM-DC-BASE	20-XCOMM-IO-OPT1	20-XCOMM-AC-PS1
Network Protocol Data rate	Dependent on installed adapter Dependent on installed adapter	—	—
Drive Protocol Data rates	DPI 125/500 Kbps	—	—
Number of inputs	—	6 (single common)	—
Input voltage type	—	24V DC source load	—
Maximum input voltage	—	27V DC	—
Rated input voltage	—	—	100...240V AC
Operating input voltage	—	—	90...264V AC
AC input frequency	—	—	47...63 Hz
Maximum input current	—	8 mA (each input)	—
Guaranteed ON-state voltage	—	10...27V DC (3 mA minimum)	—
Guaranteed OFF-state voltage	—	0...5V DC (2 mA maximum)	—

Communication Options and Accessories Specifications (continued)

Attribute	20-XCOMM-DC-BASE	20-XCOMM-IO-OPT1	20-XCOMM-AC-PS1
Reverse polarity protected	–	-30V DC	–
Input response time	–	25 ms + network update time ⁽²⁾	–
Number of outputs	–	Two relay outputs (individually isolated) • One form C contact • One form A (NO) contact	–
Maximum output contact voltage	–	27V DC/125V AC	–
Maximum output contact current	–	2 A	–
Output voltage	–	–	24V DC
Output current	–	–	830 mA
Expected contact life	–	1,000,000 cycles resistive at < 0.5 A 500,000 cycles inductive at < 0.5 A 500,000 cycles resistive at 1 A 300,000 cycles inductive at 1 A 300,000 cycles resistive at 2 A 150,000 cycles inductive at 2 A	–
Output response time	–	25 ms + network update time ⁽³⁾	–
Consumption Module	60 mA at 12V DC supplied from drive via DPI cable	–	–
Network	Ethernet: None ControlNet: None DeviceNet: 60 mA at 24V DC	–	–
DC power supply requirement	20-COMM-C: 105 mA at 24V DC ⁽¹⁾ 20-COMM-D: 60 mA at 24V DC ⁽¹⁾ 20-COMM-E: 140 mA at 24V DC ⁽¹⁾ 20-COMM-Q: 135 mA at 24V DC ⁽¹⁾ 20-COMM-M: 140 mA at 24V DC ⁽¹⁾	–	–
Dimensions (H x W x D)	108 x 108 x 75 (4.25 x 4.25 x 2.95) With I/O terminal block attached	–	–
Weight	340 g (12.0 oz)	–	–
Certifications	UL508C UL C-UL CE C-Tick	–	–

(1) The communication kit is powered by a nominal 24V DC. The current consumption that is listed in this table differs from the value that is shown on the label of the communication adapter. The label of the communication adapter is based on the adapter being powered by 5V DC from the drive.

(2) The I/O board is not designed for fast I/O response times. Do not use with input devices that transition (OFF-ON-OFF) faster than the response time. Potential input include auxiliary contact inputs from relays or overload, push buttons, and so on.

(3) The I/O board is not designed for fast I/O response times. Do not use with output devices that must transition (OFF-ON-OFF) faster than the response time. Potential output devices include pilot lights or a contact closure reset to another hardware device.

Feedback Options

This section provides information for the feedback options.

Cat. No.	Description
20-750-ENC-1 ⁽¹⁾	Incremental encoder
20-750-DENC-1 ⁽¹⁾	Dual incremental encoder
20-750-UFB-1 ⁽²⁾	Universal feedback board (includes Stegmann, Heidenhain, SSI, Biss, 5V incremental)

(1) Homing and registration functions are not supported when using this device with Studio 5000 Logix Designer® embedded motion instructions. To use the homing and registration functions, you must use the Universal Feedback Board (catalog number 20-750-UFB-1).

(2) Only PowerFlex 755 drives.

This table specifies which encoder type combinations work on a universal feedback board (UFB).

Encoder Combinations Compatible with Universal Feedback Board

		Encoder on Channel 0																			
		None	EnDat SC	Hiperface SC	BiSS SC	SSI SC	EnDat FD ChX	EnDat FD ChY	BiSS FD ChX	BiSS FD ChY	SSI FD ChX	SSI FD ChY	SinCos only	Incmtl A B Z	Incmtl SC	LinTempo ChX	LinTempo ChY	LinStahl ChX	LinStahl ChY	Lin SSI ChX	Lin SSI ChY
Encoder on Channel 1	None	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	EnDat SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	Hiperface SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	BiSS SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	SSI SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	EnDat FD ChX	C	C	C	C	C	N	N	N	C	N	C	C	C	C	N	C	N	C	N	C
	EnDat FD ChY	C	C	C	C	C	N	N	C	N	C	N	C	C	C	C	N	C	N	C	N
	BiSS FD ChX	C	C	C	C	C	N	C	N	N	N	C	C	C	C	N	C	N	C	N	C
	BiSS FD ChY	C	C	C	C	C	C	N	N	N	C	N	C	C	C	C	N	C	N	C	N
	SSI FD ChX	C	C	C	C	C	N	C	N	N	N	C	C	C	C	N	C	N	C	N	C
	SSI FD ChY	C	C	C	C	C	C	N	C	C	N	N	C	C	C	C	N	C	N	C	N
	SinCos only	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	Incmtl A B Z	C	C	C	C	C	C	C	C	C	C	C	C	N	C	C	C	C	C	C	C
	Incmtl SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	LinTempo ChX	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N	C
	LinTempo ChY	C	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N
	LinStahl ChX	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N	C
	LinStahl ChY	C	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N
	Lin SSI ChX	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N	C
	Lin SSI ChY	C	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N

C	Compatible
N	Not compatible

I/O Option Kits

This section provides information for the I/O option kits.

Cat. No.	Description ⁽¹⁾
20-750-ATEX	ATEX option module with 1 thermosensor input connection (requires 11-Series I/O module)
20-750-1132C-2R	24V DC 11-Series I/O module with 1 analog in, 1 analog out, 3 digital in and 2 relay outputs
20-750-1133C-1R2T	24V DC 11-Series I/O module with 1 analog In, 1 analog out, 3 digital in, 1 relay and 2 transistor outputs
20-750-1132D-2R	115V AC 11-Series I/O module with 1 analog In, 1 analog out, 3 digital in and 2 relay outputs
20-750-2262C-2R	24V DC 22-Series I/O module with 2 analog In, 2 analog out, 6 digital in and 2 relay outputs
20-750-2262D-2R	115V AC 22-Series I/O module with 2 analog In, 2 analog out, 6 digital in and 2 relay outputs
20-750-2263C-1R2T	24V DC 22-Series I/O module with 2 analog In, 2 analog out, 6 digital in, 3 digital out, 1 relay, and 2 transistor outputs

(1) I/O option kits are not allowed in Integrated Motion on the EtherNet/IP Network mode.

Safety Options

Three safety options are available for the PowerFlex 750-Series drives:

- Safe Torque Off
- Safe Speed Monitor
- Integrated Safety - Safe Torque Off

Safe Torque Off is ideal for safety-related applications that require the removal of rotational power to the motor without shutting down the drive. Safe Torque Off functionality offers the benefit of quick start-up after a demand on the safety system. Safe Torque Off helps reduce wear from repetitive start-up, and provides safety ratings up to and including SIL CL3, PLe, and Category 3.

Safe Speed Monitor is ideal for applications where the speed is controlled and monitored. The Safe Speed Monitor option combines Safe Torque Off capability with integrated safety relay functionality and the Safe Speed Control technology in one hardware option. The Safe Speed Monitor option provides safety ratings up to and including SIL CL3, PLe, and Category 4.

With the Safe Speed Monitor option, you can safely monitor and control the speed of your application, which allows operators to perform process or maintenance work without stopping the machine.

Cat. No.	Description
20-750-S ⁽¹⁾	Safe Torque Off (hardwired)
20-750-S1 ^{(1) (2)}	Safe Speed Monitor (hardwired)
20-750-S3 ⁽¹⁾	Integrated Safety - Safe Torque Off (networked or hardwired)

(1) Drive can accommodate only one option.

(2) Requires the dual incremental encoder or universal feedback option. Also requires catalog number 20-750-EMCSSM1-F8 EMC Option Kit with Frame 8...9 drives.

Safe Torque Off and Safe Speed Monitor Specifications

Attribute	20-750-S Safe Torque Off	20-750-S1 Safe Speed Monitor
Standards	IEC/EN60204-1, ISO13849-1, IEC 61508, IEC 61800-5-2	IEC/EN60204-1, ISO12100, IEC 61508, IEC 61800-5-2
Safety category	Cat. 3 and PL(e) per EN ISO 13849-1; SIL CL3 per IEC 61508 and EN 62061	Cat. 4 and PL(e) per EN ISO 13849-1; SIL CL3 per IEC 61508 and EN 62061
Power supply (user I/O)	24V DC \pm 10%, 0.8...1.1 x rated voltage ⁽³⁾ PELV or SELV	
Power consumption	4.4 W	36 W
Safety enable (SE+, SE-)	24V DC, 22 mA, short-circuit protected	–
Safety power (SP+, SP-)	24V DC, 35 mA, short-circuit protected	–
SLS outputs (68, 78)	–	24V DC, 50 mA, short-circuit protected
SS outputs (34, 44)	–	24V DC, 50 mA, short-circuit protected
Door control outputs (51, 52)	–	24V DC, short-circuit protected, 0.75 A bipolar (power to release/power to lock) configuration. 20 mA, cascading (2 Ch Source) configuration.
Pulse outputs (S11, S21)	–	24V DC, 50 mA, short-circuit protected
Pulse inputs (S12, S22, S32, S42, S52, S62, S72, S82, X32, X42)	–	5 mA per input, max
Input ON voltage, min	24V DC \pm 10%, 21.6...26.4V DC	15V
Input OFF voltage, max	5V	5V
Input OFF current, max	2.5 mA at 5V DC	2 mA
Input-to-output response time (SS_In, SLS_In, DM_In, ESM_In, LM_In)	–	20 ms
Overspeed response time	–	User-configurable
Inputs (S34)	–	5 mA per input, max
Conductor size ⁽¹⁾	0.3...0.8 mm ² (28...18 AWG)	0.25...2.5 mm ² (24...14 AWG)
Strip length	10 mm (0.39 in.)	6 mm (0.25 in.)
Terminal screw torque	–	0.2...0.25 N-m (1.8...2.2 lb-in)
Certification ⁽²⁾		
c-UL-us	UL Listed, certified for US and Canada.	
CE	European Union 2004/108/EC EMC Directive, and EU 2006/42/EC Machinery Directive EN 61800-3; categories C2 and C3 EN 62061; EM Immunity EN ISO 13849-1 EN 61800-5-1 EN 61800-5-2 EN 61508 Parts 1-7	
C-Tick	Australian Radiocommunications Act, compliant with EN 61800-3; categories C2 and C3	
TÜV	TÜV Certified for Functional Safety up to SIL CL3, according to EN 61800-5-2, EN 61508, and EN 62061. Up to Performance Level PL(e) and Category 3, according to EN ISO 13849-1.	TÜV Certified for Functional Safety up to SIL CL3, according to EN 61800-5-2, EN 61508, and EN 62061. Up to Performance Level PL(e) and Category 4, according to EN ISO 13849-1.

(1) See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

(2) The certification applies if the product is marked.

(3) Safety outputs need additional fuse for reverse voltage protection of the control circuit. Install a 6 A slow-blow or 10 A fast-acting fuse.

Integrated Safety Safe Torque Off Specifications

Attribute	20-750-S3 Integrated Safety Safe Torque Off
Standards	EN 60204-1, IEC 61508, EN 61800-3, EN 61800-5-1, EN 61800-5-2, EN 62061, EN ISO 13489
Safety category	Cat. 3 and PL _e per ISO 13849-1; SIL CL3 per IEC 61508 and EN 62061
Power supply (user I/O)	24V DC \pm 10%, 0.8...1.1 x rated voltage ⁽²⁾ PELV or SELV
Input type	Current sinking
Voltage, on-state input	11...30V, 3.5 mA DC
Voltage, off-state input, max	5V, 3.5 mA DC
Current, on-state input, min	3.3 mA
Current, off-state, max	1.3 mA
IEC 61131-2 (input type)	Type 3
Conductor type	Multi-conductor shielded cable
Conductor size ⁽¹⁾	0.3...0.8 mm ² (28...18 AWG)
Strip length	10 mm (0.39 in.)

(1) See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

(2) Safety outputs need additional fuse for reverse voltage protection of the control circuit. Install a 6 A slow-blow or 10 A fast-acting fuse.

PowerFlex 750-Series Drives Option Kits

This section provides information for PowerFlex 750-Series drives option kits.

PowerFlex 750-Series Drives Option Kits

Cat. No.	Description		Frame Size	
20-750-APS	Auxiliary power supply	24V auxiliary power supply	1...7 ⁽³⁾	
20-750-DCBB1-F6	DC bus bar option kit	DC bus bars for 380...480V AC drives	6	
20-750-DCBB1-F7			7	
20-750-DCBB2-F6		DC bus bars for 600...690V AC drives	6	
20-750-DCBB2-F7			7	
20-750-BUS1A-F8	DC bus connection kit	Allows connection of the drive DC bus terminals to the bus rails at the back of the cabinet. ⁽¹⁾	8	
20-750-EMC1-F1	EMC option kit	EMC plate with core for 380...480V AC drives	1	
20-750-EMC1-F2			2	
20-750-EMC1-F3			3	
20-750-EMC3-F3		EMC plate with core for 600V AC drives	3	
20-750-EMC1-F4		EMC plate with Cores for 380...480V AC drives	4	
20-750-EMC1-F5			5	
20-750-EMC3-F4		EMC plate with cores for 600V AC drives	4	
20-750-EMC3-F5			5	
20-750-EMC2-F1		EMC core for 380...480V AC drives	1	
20-750-EMC2-F2			2	
20-750-EMC2-F3			3	
20-750-EMC4-F3		EMC core for 600V AC drives	3	
20-750-EMC2-F45		EMC cores for 380...480V AC drives	4...5	
20-750-EMC4-F4		EMC cores for 600V AC drives	4	
20-750-EMC4-F5			5	
20-750-EMC3-F6		EMC plate with cores for 600...690V AC drives	6	
20-750-EMC3-F7			7	
20-750-EMC5-F6		EMC plate with cores for 600...690V AC drives (only IP54)	6	
20-750-EMC5-F7			7	
20-750-EMCCM1-F8		EMC core – inverter-mounted output, for 380...690V AC Input and DC Input drives. ⁽²⁾	8...10	
20-750-EMCSSM1-F8		EMC cores – required when using the Safe Speed Monitor option, catalog number 20-750-S1, with 380...690V drives.	8...10	
20-750-HOOD1-F8		Exhaust hood	Exhaust Hood – IP20, NEMA/UL Type 1 drives	8
20-750-FLNG1-F2		Flange adapter kit	Converts Open Type drive to external heatsink (flange) with NEMA/UL Type 1 integrity backside. This kit is for use with IP20, NEMA/UL Type 0 drives and does not provide an airtight or watertight seal. Where an airtight or watertight seal is required (for example, contaminated, dirty, or wet environments), use a drive with an “F” enclosure option.	2
20-750-FLNG1-F3				3
20-750-FLNG1-F4	4			
20-750-FLNG1-F5	5			
20-750-FLNG4-F6	6			
20-750-FLNG4-F7	7			
20-750-LBRKT1	L bus bar kit		Includes three L-brackets	8...10

PowerFlex 750-Series Drives Option Kits (Continued)

Cat. No.	Description		Frame Size
20-750-NEMA1-F1	NEMA/UL Type 1 Option Kit	NEMA/UL Type 1 Kit	1
20-750-NEMA1-F2			2
20-750-NEMA1-F3			3
20-750-NEMA1-F4			4
20-750-NEMA1-F5			5
20-750-NEMA1-F6			6
20-750-NEMA1-F7			7
20-750-ACTE1-F6	Power terminal extension	Allows connection of two parallel leads to the AC power terminals.	6
20-750-PTG1-F6	Power terminal guard	Provides additional protection against contact with the power terminals.	6
20-750-PTG1-F7			7
20-750-RPD1-F8	Remote control POD mounting kit	Fiber-optic and power supply cables that are used to mount the control POD up to 23 m (75 ft) from the drive.	8...10
20-750-CART1-F8	Roll-out cart	A wheeled roll-out cart that facilitates drive installation and removal. Required for Frame 8 and larger drives.	8...10

(1) DC bus access is included with Frames 9 and 10.

(2) Frame 8 requires one EMC output core, Frame 9 requires two EMC output cores, and Frame 10 requires three EMC output cores.

(3) Frame 8 and up drives can be powered from an external 24V DC source, option kit catalog number 20-750-APS is not required.

PowerFlex 755 IP00, NEMA/UL Open Type Drive Options

This section provides information for PowerFlex 755 IP00, NEMA/UL Open Type drive options.

PowerFlex 755 IP00, NEMA/UL Open Type Drive Options

Description	Required?	Frame 8		Frame 9		Frame 10	
		Cat. No.	Qty.	Cat. No.	Qty.	Cat. No.	Qty.
Field termination, converter, AC input	Recommended	20-750-BUS2-F8	1	20-750-BUS2-F9	1	20-750-BUS2-F10	1
Field termination, inverter, AC output	Recommended	20-750-BUS3-F8	1	20-750-BUS3-F9	1	20-750-BUS3-F10	1
Field termination, DC bus, 400/480V	Recommended	20-750-BUS4-F8	1	20-750-BUS4-F9	1	20-750-BUS4-F10	1
Field termination, DC bus, 600/690V	Recommended	20-750-BUS4-F8	1	20-750-BUS6-F9	1	20-750-BUS6-F10	1
Field termination, DC input, common bus precharge ⁽¹⁾⁽²⁾	Recommended	20-750-BUS5-F8	1	20-750-BUS5-F9	1	20-750-BUS5-F10	1
Pod bucket assembly	Required	20-750-POD1-F8	1	20-750-POD1-F8	1	20-750-POD1-F8	1
Pod, cable, 24V supply ⁽³⁾	Required	20-750-PH1-F8	⁽⁴⁾	20-750-PH2-F9	1	20-750-PH3-F10	1
Cable, fiber-optic, 560 mm (22 in.) ⁽³⁾	Required	20-750-FCBL1-F8	1	–	–	–	–
Cable, fiber-optic, 2.8 m (110 in.) ⁽³⁾	Required	–	–	20-750-FCBL1-F10	2	20-750-FCBL1-F10	3
Transceiver, fiber-optic	Required	–	–	SK-R1-FTR1-F8	1	SK-R1-FTR1-F8	2
Pod, remote mounting kit	Optional	20-750-RPD1-F8	1	–	–	–	–
Mounting kit, back panel	Recommended	20-750-MNT2-F8	1	20-750-MNT2-F9	1	20-750-MNT2-F10	1
Mounting kit, floor	Recommended	20-750-MNT3-F8	1	20-750-MNT3-F9	1	20-750-MNT3-F10	1
Duct, top outlet	Recommended	20-750-DUCT2-F8	1	20-750-DUCT2-F8	2	20-750-DUCT2-F8	3
Duct, bottom inlet	Recommended	20-750-DUCT4-F8	1	20-750-DUCT4-F8	2	20-750-DUCT4-F8	3
Roll-out cart	Recommended	20-750-CART1-F8	1	20-750-CART1-F8	1	20-750-CART1-F8	1
Control power circuit breaker ⁽²⁾	Recommended	1489-A2D130	1	1489-A2D130	2	1489-A2D130	3

PowerFlex 755 IP00, NEMA/UL Open Type Drive Options (Continued)

Description	Required?	Frame 8		Frame 9		Frame 10	
		Cat. No.	Qty.	Cat. No.	Qty.	Cat. No.	Qty.
Control power circuit breaker lock ⁽²⁾	Recommended	1489-AAL0A	1	1489-AAL0A	2	1489-AAL0A	3
EMC core, converter input, AC input	Optional	20-750-EMCBUS1-F8	1	20-750-EMCBUS1-F8	2	20-750-EMCBUS1-F8	3
EMC core, inverter output	Optional	20-750-EMCCM1-F8	1	20-750-EMCCM1-F8	2	20-750-EMCCM1-F8	3

(1) EMC cores are included with the catalog number 20-750-BUSS-Fx kits.

(2) Common DC input drives only.

(3) If the control pod is mounted in the drive, use catalog number 20-750-PH1-Fx and catalog number 20-750-FBCL1-Fx kits. If the control pod is remote-mounted (up to 23 m [75 ft] away), order catalog number 20-750-RPD1-Fx kit.

(4) A 24V supply cable is included with each Frame 8 drive unit.

Internal Dynamic Brake Resistor Kits

These resistors have a limited duty cycle. To determine whether an internal resistor is sufficient for your application, see the PowerFlex Dynamic Braking Resistor Calculator Application Technique, publication [PFLEX-AT001](#). An external resistor can be required.

Cat. No.	Drive Input Voltage	Frame	Rating (ND kW)	Rating (ND Hp)	Brake Resistance
20-750-DB1-D1A	380...480V AC	1	0.75...2.2	1...3	115 Ω
20-750-DB1-D1			4...7.5	5...10	62 Ω
20-750-DB1-D2		2	0.75...11	1...15	62 Ω

Terminators

This table provided information for terminators.

Cat. No.	Description ⁽¹⁾
1204-TFA1	For use with 3.7 kW (5 Hp) and lower drives.
1204-TFB2	For use with 1.5 kW (2 Hp) and higher drives.

(1) For selection information, see Appendix A of the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication [DRIVES-IN001](#).

Reflected Wave Reduction Modules with Common Mode Choke

This table provided information for reflected wave reduction modules with common mode choke.

Cat. No.	Description ⁽¹⁾
1204-RWC-17-A	17 A with common mode choke

(1) For selection information, see Appendix A of the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication [DRIVES-IN001](#).

Reflected Wave Reduction Modules

This table provides information for reflected wave reduction modules.

ND kW	ND Hp	Cat. No.	
		380...480V AC	600V AC
4	5	1321-RWR8-DP	1321-RWR8-EP
5.5	7.5	1321-RWR12-DP	1321-RWR12-EP
7.5	10	1321-RWR18-DP	1321-RWR18-EP
11	15	1321-RWR25-DP	1321-RWR25-EP
15	20	1321-RWR35-DP	1321-RWR35-EP
18.5	25	1321-RWR35-DP	1321-RWR35-EP
22	30	1321-RWR45-DP	1321-RWR45-EP
30	40	1321-RWR55-DP	1321-RWR55-EP
37	50	1321-RWR80-DP	1321-RWR80-EP
45	60	1321-RWR80-DP	1321-RWR80-EP
55	75	1321-RWR100-DP	1321-RWR100-EP
75	100	1321-RWR130-DP	1321-RWR130-EP
90	125	1321-RWR160-DP	1321-RWR160-EP
110	150	1321-RWR200-DP	1321-RWR200-EP
149	200	1321-RWR250-DP	1321-RWR250-EP
187	250	1321-RWR320-DP	1321-RWR320-EP

Isolation Transformers

This section provides information for isolation transformers.

IP32, NEMA/UL Type 3R Standalone, 4...6% Nominal Impedance

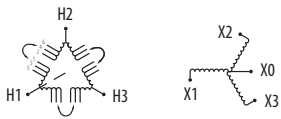


Diagram 1

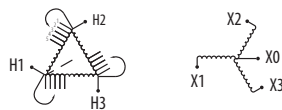


Diagram 2

460V, 60 Hz, Three-phase, 460V Primary and 460V Secondary

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
0.75	1	1	1321-3TW005-BB
1.5	2	1	1321-3TW005-BB
2.2	3	1	1321-3TW005-BB
22	30	2	1321-3TW040-BB
30	40	2	1321-3TW051-BB
37	50	2	1321-3TH063-BB
45	60	2	1321-3TH075-BB
55	75	2	1321-3TH093-BB
75	100	2	1321-3TH118-BB
90	125	2	1321-3TH145-BB

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
110	150	2	1321-3TH175-BB
149	200	2	1321-3TH220-BB
187	250	2	1321-3TH275-BB
224	300	2	1321-3TH330-BB
261	350	1	1321-3TH440-BB
298	400	1	1321-3TH440-BB
336	450	1	1321-3TH550-BB
373	500	1	1321-3TH550-BB
448	600	1	1321-3TH660-BB
485	650	1	—

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
522	700	1	1321-3TH770-BB
560	750	1	1321-3TH770-BB
597	800	1	1321-3TH880-BB
671	900	900 kVA	A 1321 isolation transformer solution is not available. Approximate drive kVA is shown at left.
746	1000	1000 kVA	
821	1100	1200 kVA	
933	1250	1200 kVA	
1007	1350	1300 kVA	
1119	1500	1500 kVA	
1492	2000	2000 kVA	

575V, 60 Hz, Three-phase, 575V Primary, and 575V Secondary

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
0.75	1	1	1321-3TW005-CC
1.5	2	1	1321-3TW005-CC
2.2	3	1	1321-3TW005-CC
22	30	2	1321-3TW040-CC
30	40	2	1321-3TW051-CC
37	50	2	1321-3TH063-CC
45	60	2	1321-3TH075-CC
55	75	2	1321-3TH093-CC
75	100	1	1321-3TH118-CC

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
90	125	1	1321-3TH145-CC
110	150	1	1321-3TH175-CC
149	200	1	1321-3TH220-CC
187	250	1	1321-3TH275-CC
224	300	1	1321-3TH330-CC
261	350	1	1321-3TH440-CC
298	400	1	1321-3TH550-CC
336	450	1	1321-3TH550-CC
373	500	1	1321-3TH660-CC

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
410	550	1	1321-3TH660-CC
448	600	1	1321-3TH770-CC
522	700	1	1321-3TH770-CC
597	800	1	1321-3TH880-CC
671	900	950 kVA	A 1321 isolation transformer solution is not available. Approximate drive kVA is shown at left.
709	950	1000 kVA	
746	1000	1100 kVA	
895	1200	1200 kVA	
1119	1500	1500 kVA	

Input and Output Reactors

This section provides information for input and output reactors.

380...480V, 50/60 Hz, Three-phase, 3% Impedance

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
0.75	1	Normal	1321-3R2-A	1321-3RA2-A	1321-3R2-A	1321-3RA2-A
1.1	1.5	Heavy	1321-3R4-C	1321-3RA4-C	1321-3R4-B	1321-3RA4-B
1.5	2	Normal	1321-3R4-B	1321-3RA4-B	1321-3R4-B	1321-3RA4-B
		Heavy	1321-3R4-B	1321-3RA4-B	1321-3R8-C	1321-3RA8-C
2.2	3	Normal	1321-3R8-C	1321-3RA8-C	1321-3R8-C	1321-3RA8-C
		Heavy	1321-3R8-C	1321-3RA8-C	1321-3R8-B	1321-3RA8-B
4	5	Normal	1321-3R8-B	1321-3RA8-B	1321-3R8-B	1321-3RA8-B
		Heavy	1321-3R8-B	1321-3RA8-B	1321-3R12-B	1321-3RA12-B
5.5	7.5	Normal	1321-3R12-B	1321-3RA12-B	1321-3R12-B	1321-3RA12-B
		Heavy	1321-3R12-B	1321-3RA12-B	1321-3R18-B	1321-3RA18-B
7.5	10	Normal	1321-3R18-B	1321-3RA18-B	1321-3R18-B	1321-3RA18-B
		Heavy	1321-3R18-B	1321-3RA18-B	1321-3R25-B	1321-3RA25-B
11	15	Normal	1321-3R25-B	1321-3RA25-B	1321-3R25-B	1321-3RA25-B
		Heavy	1321-3R25-B	1321-3RA25-B	1321-3R25-B	1321-3RA25-B
15	20	Normal	1321-3R35-B	1321-3RA35-B	1321-3R25-B	1321-3RA25-B
		Heavy	1321-3R35-B	1321-3RA35-B	1321-3R35-B	1321-3RA35-B
18.5	25	Normal	1321-3R35-B	1321-3RA35-B	1321-3R35-B	1321-3RA35-B
		Heavy	1321-3R35-B	1321-3RA35-B	1321-3R45-B	1321-3RA45-B
22	30	Normal	1321-3R45-B	1321-3RA45-B	1321-3R45-B	1321-3RA45-B
		Heavy	1321-3R45-B	1321-3RA45-B	1321-3R55-B	1321-3RA55-B
30	40	Normal	1321-3R55-B	1321-3RA55-B	1321-3R55-B	1321-3RA55-B
		Heavy	1321-3R55-B	1321-3RA55-B	1321-3R80-B	1321-3RA80-B
37	50	Normal	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
		Heavy	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
45	60	Normal	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
		Heavy	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
55	75	Normal	1321-3R100-B	1321-3RA100-B	1321-3R100-B	1321-3RA100-B
		Heavy	1321-3R100-B	1321-3RA100-B	1321-3R100-B	1321-3RA100-B
75	100	Normal	1321-3R130-B	1321-3RA130-B	1321-3R130-B	1321-3RA130-B
		Heavy	1321-3R130-B	1321-3RA130-B	1321-3R130-B	1321-3RA130-B
90	125	Normal	1321-3R160-B	1321-3RA160-B	1321-3R160-B	1321-3RA160-B
		Heavy	1321-3R160-B	1321-3RA160-B	1321-3R160-B	1321-3RA160-B
110	150	Normal	1321-3R200-B	1321-3RA200-B	1321-3R200-C	1321-3RA200-C
		Heavy	1321-3R200-B	1321-3RA200-B	1321-3R200-C	1321-3RA200-C
–	200	Normal/Heavy	1321-3RB250-B	1321-3RAB250-B	1321-3RB250-B	1321-3RAB250-B
132	–	Normal/Heavy	1321-3RB320-B	1321-3RAB320-B	1321-3RB320-B	1321-3RAB320-B
160	250	Normal/Heavy	1321-3RB320-B	1321-3RAB320-B	1321-3RB320-B	1321-3RAB320-B
–	300	Normal/Heavy	1321-3RB400-B	1321-3RAB400-B	1321-3RB400-B	1321-3RAB400-B
200	–	Normal/Heavy	1321-3RB400-B	1321-3RAB400-B	1321-3RB400-B	1321-3RAB400-B
–	350	Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B

380...480V, 50/60 Hz, Three-phase, 3% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
250	–	Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
270	–	Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
–	400	Light/Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
315	–	Light/Normal/Heavy	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
–	450	Light/Normal/Heavy	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
355	–	Light/Normal/Heavy	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
–	500	Light	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
		Normal/Heavy	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
400	–	Light/Heavy	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
		Normal	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
–	600	Light/Normal/Heavy	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
450	–	Light	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
–	650	Light	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
		Normal	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
–	700	Light/Normal/Heavy	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
–	750	Heavy	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
500	–	Normal/Heavy	1321-3R1000-B	1321-3RA1000-B	1321-3R1000-B	1321-3RA1000-B
–	800	Light/Normal/Heavy	1321-3R1000-B	1321-3RA1000-B	1321-3R1000-B	1321-3RA1000-B
560	–	Light/Normal/Heavy	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾
–	900	Light/Normal/Heavy	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾
630	–	Light/Normal/Heavy	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾
–	1000	Light/Normal/Heavy	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾
710	–	Light/Normal/Heavy	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾
–	1100	Light/Normal	1321-3R750-B ⁽¹⁾	1321-3RA750-B ⁽¹⁾	1321-3R750-B ⁽¹⁾	1321-3RA750-B ⁽¹⁾
800	–	Light/Normal	1321-3R750-B ⁽¹⁾	1321-3RA750-B ⁽¹⁾	1321-3R750-B ⁽¹⁾	1321-3RA750-B ⁽¹⁾
–	1250	Light/Normal	1321-3R750-B ⁽¹⁾	1321-3RA750-B ⁽¹⁾	1321-3R750-B ⁽¹⁾	1321-3RA750-B ⁽¹⁾
850	–	Light/Normal	1321-3R750-B ⁽¹⁾	1321-3RA750-B ⁽¹⁾	1321-3R750-B ⁽¹⁾	1321-3RA750-B ⁽¹⁾
–	1350	Light	1321-3R850-B ⁽¹⁾	1321-3RA850-B ⁽¹⁾	1321-3R850-B ⁽¹⁾	1321-3RA850-B ⁽¹⁾
900	–	Light	1321-3R850-B ⁽¹⁾	1321-3RA850-B ⁽¹⁾	1321-3R850-B ⁽¹⁾	1321-3RA850-B ⁽¹⁾
–	1500	Light	1321-3R850-B ⁽²⁾	1321-3RA850-B ⁽²⁾	1321-3R850-B ⁽²⁾	1321-3RA850-B ⁽²⁾
1000	–	Light	1321-3R850-B ⁽²⁾	1321-3RA850-B ⁽²⁾	1321-3R850-B ⁽²⁾	1321-3RA850-B ⁽²⁾
–	2000	Light	1321-3R850-B ⁽²⁾	1321-3RA850-B ⁽²⁾	1321-3R850-B ⁽²⁾	1321-3RA850-B ⁽²⁾
1400	–	Light	1321-3R850-B ⁽²⁾	1321-3RA850-B ⁽²⁾	1321-3R850-B ⁽²⁾	1321-3RA850-B ⁽²⁾

(1) Requires two reactors that are wired in parallel.

(2) Requires three reactors that are wired in parallel.

380...480V, 50/60 Hz, Three-phase, 5% Impedance

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
0.75	1	Normal	1321-3R2-B	1321-3RA2-B	1321-3R2-B	1321-3RA2-B
1.1	1.5	Heavy	1321-3R4-D	1321-3RA4-D	1321-3R4-D	1321-3RA4-D
1.5	2	Normal	1321-3R4-D	1321-3RA4-D	1321-3R4-D	1321-3RA4-D
		Heavy	1321-3R4-D	1321-3RA4-D	1321-3R8-D	1321-3RA8-D
2.2	3	Normal	1321-3R8-D	1321-3RA8-D	1321-3R8-D	1321-3RA8-D
		Heavy	1321-3R8-D	1321-3RA8-D	1321-3R8-C	1321-3RA8-C
4	5	Normal	1321-3R8-C	1321-3RA8-C	1321-3R8-C	1321-3RA8-C
		Heavy	1321-3R8-C	1321-3RA8-C	1321-3R12-C	1321-3RA12-C
5.5	7.5	Normal	1321-3R12-C	1321-3RA12-C	1321-3R12-C	1321-3RA12-C
		Heavy	1321-3R12-C	1321-3RA12-C	1321-3R18-C	1321-3RA18-C
7.5	10	Normal	1321-3R18-C	1321-3RA18-C	1321-3R18-C	1321-3RA18-C
		Heavy	1321-3R18-C	1321-3RA18-C	1321-3R25-C	1321-3RA25-C
11	15	Normal/Heavy	1321-3R25-C	1321-3RA25-C	1321-3R25-C	1321-3RA25-C
15	20	Normal	1321-3R35-C	1321-3RA35-C	1321-3R25-C	1321-3RA25-C
		Heavy	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
18.5	25	Normal	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
		Heavy	1321-3R35-C	1321-3RA35-C	1321-3R45-C	1321-3RA45-C
22	30	Normal	1321-3R45-C	1321-3RA45-C	1321-3R45-C	1321-3RA45-C
		Heavy	1321-3R45-C	1321-3RA45-C	1321-3R55-C	1321-3RA55-C
30	40	Normal	1321-3R55-C	1321-3RA55-C	1321-3R55-C	1321-3RA55-C
		Heavy	1321-3R55-C	1321-3RA55-C	1321-3R80-C	1321-3RA80-C
37	50	Normal	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C
		Heavy	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C
45	60	Normal/Heavy	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C
55	75	Normal/Heavy	1321-3R100-C	1321-3RA100-C	1321-3R100-C	1321-3RA100-C
75	100	Normal/Heavy	1321-3R130-C	1321-3RA130-C	1321-3R130-C	1321-3RA130-C
90	125	Normal/Heavy	1321-3R160-C	1321-3RA160-C	1321-3R160-C	1321-3RA160-C
110	150	Normal	1321-3R200-C	1321-3RA200-C	1321-3R200-C	1321-3RA200-C
		Heavy	1321-3R200-C	1321-3RA200-C	1321-3R200-C	1321-3RA200-C
–	200	Normal/Heavy	1321-3RB250-C	1321-3RAB250-C	1321-3RB250-C	1321-3RAB250-C
132	–	Normal/Heavy	1321-3RB320-C	1321-3RAB320-C	1321-3RB320-C	1321-3RAB320-C
160	250	Normal/Heavy	1321-3RB320-C	1321-3RAB320-C	1321-3RB320-C	1321-3RAB320-C
–	300	Normal/Heavy	1321-3RB400-C	1321-3RAB400-C	1321-3RB400-C	1321-3RAB400-C
200	–	Normal/Heavy	1321-3RB400-C	1321-3RAB400-C	1321-3RB400-C	1321-3RAB400-C
–	350	Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
250	–	Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
270	–	Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
–	400	Light/Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
315	–	Light/Normal/Heavy	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
336	450	Normal/Heavy	1321-3RA600-C	1321-3RA600-C	1321-3R500-C	1321-3RA500-C
–	450	Light/Normal/Heavy	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
355	–	Light/Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
–	500	Light	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C

380...480V, 50/60 Hz, Three-phase, 5% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
		Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
400	–	Light/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
		Normal	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	600	Light/Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
450	–	Light	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
500	–	Normal/Heavy	1321-3R1000-C	1321-3RA1000-C	1321-3R1000-C	1321-3RA1000-C
–	650	Light	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
		Normal	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
–	700	Light/Normal/Heavy	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	750	Heavy	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	800	Light/Normal/Heavy	1321-3R1000-C	1321-3RA1000-C	1321-3R1000-C	1321-3RA1000-C
560	–	Light/Normal/Heavy	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾
630	–	Light/Normal/Heavy	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾
–	900	Light/Normal/Heavy	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾
710	–	Light/Normal/Heavy	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾
–	1000	Light/Normal/Heavy	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾
–	1100	Light/Normal	1321-3R750-C ⁽¹⁾	1321-3RA750-C ⁽¹⁾	1321-3R750-C ⁽¹⁾	1321-3RA750-C ⁽¹⁾
800	–	Light/Normal	1321-3R750-C ⁽¹⁾	1321-3RA750-C ⁽¹⁾	1321-3R750-C ⁽¹⁾	1321-3RA750-C ⁽¹⁾
850	–	Light/Normal	1321-3R750-C ⁽¹⁾	1321-3RA750-C ⁽¹⁾	1321-3R750-C ⁽¹⁾	1321-3RA750-C ⁽¹⁾
–	1250	Light/Normal	1321-3R750-C ⁽¹⁾	1321-3RA750-C ⁽¹⁾	1321-3R750-C ⁽¹⁾	1321-3RA750-C ⁽¹⁾
900	–	Light	1321-3R850-C ⁽¹⁾	1321-3RA850-C ⁽¹⁾	1321-3R850-C ⁽¹⁾	1321-3RA850-C ⁽¹⁾
–	1350	Light	1321-3R850-C ⁽¹⁾	1321-3RA850-C ⁽¹⁾	1321-3R850-C ⁽¹⁾	1321-3RA850-C ⁽¹⁾
–	1500	Light	1321-3R850-C ⁽²⁾	1321-3RA850-C ⁽²⁾	1321-3R850-C ⁽²⁾	1321-3RA850-C ⁽²⁾
1000	–	Light	1321-3R850-C ⁽²⁾	1321-3RA850-C ⁽²⁾	1321-3R850-C ⁽²⁾	1321-3RA850-C ⁽²⁾
–	2000	Light	1321-3R850-C ⁽²⁾	1321-3RA850-C ⁽²⁾	1321-3R850-C ⁽²⁾	1321-3RA850-C ⁽²⁾
1400	–	Light	1321-3R850-C ⁽²⁾	1321-3RA850-C ⁽²⁾	1321-3R850-C ⁽²⁾	1321-3RA850-C ⁽²⁾

(1) Requires two reactors that are wired in parallel.

(2) Requires three reactors that are wired in parallel.

600...690V, 50/60 Hz, Three-phase, 3% Impedance

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
–	0.5	Heavy	1321-3R1-C	1321-3RA1-C	1321-3R1-C	1321-3RA1-C
–	1	Normal	1321-3R2-B	1321-3RA2-B	1321-3R2-A	1321-3RA2-B
		Heavy	1321-3R2-B	1321-3RA2-B	1321-3R4-A	1321-3RA4-A
–	2	Normal	1321-3R4-D	1321-3RA4-D	1321-3R4-C	1321-3RA4-C
		Heavy	1321-3R4-C	1321-3RA4-C	1321-3R4-C	1321-3RA4-C
–	3	Normal/Heavy	1321-3R4-B	1321-3RA4-B	1321-3R4-B	1321-3RA4-B
–	5	Normal/Heavy	1321-3R8-C	1321-3RA8-C	1321-3R8-C	1321-3RA8-C
5.5	–	Heavy	1321-3R12-C	1321-3RA12-C	1321-3R12-C	1321-3RA12-C
–	7.5	Normal/Heavy	1321-3R12-B	1321-3RA12-B	1321-3R12-B	1321-3RA12-B

600...690V, 50/60 Hz, Three-phase, 3% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
7.5	-	Normal	1321-3R12-B	1321-3RA12-B	1321-3R12-B	1321-3RA12-B
		Heavy	1321-3R12-C	1321-3RA12-C	1321-3R18-C	1321-3RA18-C
-	10	Normal	1321-3R12-B	1321-3RA12-B	1321-3R12-B	1321-3RA12-B
		Heavy	1321-3R12-B	1321-3RA12-B	1321-3R18-C	1321-3RA18-C
11	-	Normal/Heavy	1321-3R18-C	1321-3RA18-C	1321-3R18-C	1321-3RA18-C
-	15	Normal	1321-3R18-B	1321-3RA18-B	1321-3R18-B	1321-3RA18-B
		Heavy	1321-3R25-B	1321-3RA25-B	1321-3R25-B	1321-3RA25-B
15	-	Normal/Heavy	1321-3R25-C	1321-3RA25-C	1321-3R25-C	1321-3RA25-C
-	20	Normal	1321-3R25-B	1321-3RA25-B	1321-3R25-B	1321-3RA25-B
		Heavy	1321-3R35-B	1321-3RA35-B	1321-3R35-B	1321-3RA35-B
18.5	-	Normal/Heavy	1321-3R25-C	1321-3RA25-C	1321-3R25-C	1321-3RA25-C
-	25	Normal	1321-3R25-B	1321-3RA25-B	1321-3R35-B	1321-3RA35-B
22	-	Normal/Heavy	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
-	30	Normal/Heavy	1321-3R35-B	1321-3RA35-B	1321-3R35-B	1321-3RA35-B
30	-	Normal/Heavy	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
-	40	Normal/Heavy	1321-3R45-B	1321-3RA45-B	1321-3R45-B	1321-3RA45-B
37	-	Normal/Heavy	1321-3R45-B	1321-3RA45-B	1321-3R55-C	1321-3RA55-C
-	50	Normal/Heavy	1321-3R55-B	1321-3RA55-B	1321-3R55-B	1321-3RA55-B
45	-	Normal/Heavy	1321-3R55-B	1321-3RA55-B	1321-3R55-B	1321-3RA55-B
-	60	Normal/Heavy	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
55	-	Normal	1321-3R80-C	1321-3RA80-C	1321-3R80-B	1321-3RA80-B
		Heavy	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
-	75	Normal/Heavy	1321-3R100-B	1321-3RA100-B	1321-3R100-B	1321-3RA100-B
75	-	Normal/Heavy	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
-	100	Normal	1321-3R100-B	1321-3RA100-B	1321-3R100-B	1321-3RA100-B
		Heavy	1321-3R100-B	1321-3RA100-B	1321-3R130-B	1321-3RA130-B
90	-	Normal/Heavy	1321-3R100-B	1321-3RA100-B	1321-3R100-B	1321-3RA100-B
-	125	Normal/Heavy	1321-3R130-B	1321-3RA130-B	1321-3R130-B	1321-3RA130-B
110	-	Normal/Heavy	1321-3R130-C	1321-3RA130-C	1321-3R130-C	1321-3RA130-C
-	150	Normal	1321-3R160-B	1321-3RA160-B	1321-3R160-B	1321-3RA160-B
		Heavy	1321-3R200-B	1321-3RA200-B	1321-3R200-B	1321-3RA200-B
132	-	Normal/Heavy	1321-3R160-C	1321-3RA160-C	1321-3R160-C	1321-3RA160-C
-	200	Normal/Heavy	1321-3R200-B	1321-3RA200-B	1321-3R200-B	1321-3RA200-B
160	-	Normal	1321-3R160-C	1321-3RA160-C	1321-3R160-C	1321-3RA160-C
		Heavy	1321-3R200-C	1321-3RAB200-C	1321-3R200-C	1321-3RAB200-C
-	250	Normal/Heavy	1321-3R250-B	1321-3RA250-B	1321-3R250-B	1321-3RA250-B
-	300	Normal/Heavy	1321-3RB320-B	1321-3RAB320-B	1321-3RB320-B	1321-3RAB320-B

600...690V, 50/60 Hz, Three-phase, 3% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
200	-	Normal	1321-3RB200-C	1321-3RAB200-C	1321-3RB200-C	1321-3RAB200-C
		Heavy	1321-3R200-C	1321-3RAB200-C	1321-3RB250-C	1321-3RAB250-C
		Heavy	1321-3R250-B	1321-3RA250-B	1321-3R250-B	1321-3RA250-B
-	350	Light/Normal/Heavy	1321-3RB400-B	1321-3RAB400-B	1321-3RB400-B	1321-3RAB400-B
250	-	Normal	1321-3RB250-C	1321-3RAB250-C	1321-3RB250-C	1321-3RAB250-C
		Normal/Heavy	1321-3RB320-B	1321-3RAB320-B	1321-3RB320-B	1321-3RAB320-B
-	400	Light/Normal/Heavy	1321-3RB400-B	1321-3RAB400-B	1321-3RB400-B	1321-3RAB400-B
300	-	Heavy	1321-3RB400-B	1321-3RAB400-B	1321-3RB400-B	1321-3RAB400-B
-	450	Light/Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
315	-	Light/Normal	1321-3RB400-B	1321-3RAB400-B	1321-3RB400-B	1321-3RAB400-B
-	500	Light/Normal	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
355	-	Light/Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
375	-	Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
400	-	Light/Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
450	-	Light/Normal	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
450	-	Heavy	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
500	-	Light/Normal	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
500	-	Heavy	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
530	-	Light	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
-	500	Heavy	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
-	550	Light	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
-	600	Normal/Heavy	1321-3R600-B	1321-3RA600-B	1321-3R600-B	1321-3RA600-B
-	700	Light/Normal/Heavy	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
560	-	Normal/Heavy	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
-	750	Heavy	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
630	-	Light/Normal/Heavy	1321-3R750-B	1321-3RA750-B	1321-3R750-B	1321-3RA750-B
-	800	Light/Normal/Heavy	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
710	-	Light/Normal/Heavy	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
-	900	Light/Normal/Heavy	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
750	-	Normal	1321-3R850-B	1321-3RA850-B	1321-3R850-B	1321-3RA850-B
-	950	Light/Normal	1321-3R1000-B	1321-3RA1000-B	1321-3R1000-B	1321-3RA1000-B
800	-	Light/Normal/Heavy	1321-3R1000-B	1321-3RA1000-B	1321-3R1000-B	1321-3RA1000-B
-	1000	Light/Normal	1321-3R1000-B	1321-3RA1000-B	1321-3R1000-B	1321-3RA1000-B
850	-	Light	1321-3R1000-B	1321-3RA1000-B	1321-3R1000-B	1321-3RA1000-B
-	1100	Light	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾
900	-	Light/Normal	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾
1000	-	Light	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾	1321-3R600-B ⁽¹⁾	1321-3RA600-B ⁽¹⁾

600...690V, 50/60 Hz, Three-phase, 3% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
1100	–	Light/Normal	1321-3R600-B ⁽²⁾	1321-3RA600-B ⁽²⁾	1321-3R600-B ⁽²⁾	1321-3RA600-B ⁽²⁾
–	1200	Light	1321-3R600-B ⁽²⁾	1321-3RA600-B ⁽²⁾	1321-3R600-B ⁽²⁾	1321-3RA600-B ⁽²⁾
1500	–	Light/Normal	1321-3R600-B ⁽²⁾	1321-3RA600-B ⁽²⁾	1321-3R600-B ⁽²⁾	1321-3RA600-B ⁽²⁾
–	1500	Light	1321-3R600-B ⁽²⁾	1321-3RA600-B ⁽²⁾	1321-3R600-B ⁽²⁾	1321-3RA600-B ⁽²⁾

(1) Requires two reactors that are wired in parallel.

(2) Requires three reactors that are wired in parallel.

600...690V, 50/60 Hz, Three-phase, 5% Impedance

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
–	0.5	Heavy	1321-3R1-C	1321-3RA1-C	1321-3R1-C	1321-3RA1-C
–	1	Normal	1321-3R2-C	1321-3RA2-C	1321-3R2-C	1321-3RA2-C
		Heavy	1321-3R4-D	1321-3RA4-D	1321-3R2-D	1321-3RA4-D
–	2	Normal/Heavy	1321-3R4-D	1321-3RA4-D	1321-3R4-D	1321-3RA4-D
–	3	Normal/Heavy	1321-3R4-D	1321-3RA4-D	1321-3R4-D	1321-3RA4-D
–	5	Normal/Heavy	1321-3R8-D	1321-3RA8-D	1321-3R8-D	1321-3RA8-D
5.5	–	Heavy	1321-3R12-C	1321-3RA12-C	1321-3R12-C	1321-3RA12-C
–	7.5	Normal/Heavy	1321-3R12-C	1321-3RA12-C	1321-3R12-C	1321-3RA12-C
7.5	–	Normal/Heavy	1321-3R12-C	1321-3RA12-C	1321-3R12-C	1321-3RA12-C
–	10	Normal/Heavy	1321-3R12-C	1321-3RA12-C	1321-3R12-C	1321-3RA12-C
11	–	Normal/Heavy	1321-3R18-C	1321-3RA18-C	1321-3R18-C	1321-3RA18-C
–	15	Normal/Heavy	1321-3R18-C	1321-3RA18-C	1321-3R18-C	1321-3RA18-C
15	–	Normal/Heavy	1321-3R25-C	1321-3RA25-C	1321-3R25-C	1321-3RA25-C
–	20	Normal/Heavy	1321-3R25-C	1321-3RA25-C	1321-3R25-C	1321-3RA25-C
18.5	–	Normal/Heavy	1321-3R25-C	1321-3RA25-C	1321-3R25-C	1321-3RA25-C
–	25	Normal/Heavy	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
22	–	Normal/Heavy	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
–	30	Normal	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
		Heavy	1321-3R45-C	1321-3RA45-C	1321-3R45-C	1321-3RA45-C
30	–	Normal/Heavy	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
–	40	Normal/Heavy	1321-3R45-C	1321-3RA45-C	1321-3R45-C	1321-3RA45-C
37	–	Normal/Heavy	1321-3R45-C	1321-3RA45-C	1321-3R45-C	1321-3RA45-C
–	50	Normal/Heavy	1321-3R55-C	1321-3RA55-C	1321-3R55-C	1321-3RA55-C
45	–	Normal/Heavy	1321-3R55-C	1321-3RA55-C	1321-3R55-C	1321-3RA55-C
–	60	Normal/Heavy	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C
55	–	Normal/Heavy	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C
–	75	Normal/Heavy	1321-3R100-C	1321-3RA100-C	1321-3R100-C	1321-3RA100-C
75	–	Normal	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C
		Heavy	1321-3R80-C	1321-3RA80-C	1321-3R100-C	1321-3RA100-C
–	100	Normal/Heavy	1321-3R100-C	1321-3RA100-C	1321-3R100-C	1321-3RA100-C
90	–	Normal/Heavy	1321-3R100-C	1321-3RA100-C	1321-3R100-C	1321-3RA100-C

600...690V, 50/60 Hz, Three-phase, 5% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
–	125	Normal/Heavy	1321-3R130-C	1321-3RA130-C	1321-3R130-C	1321-3RA130-C
110	–	Normal/Heavy	1321-3R130-C	1321-3RA130-C	1321-3R130-C	1321-3RA130-C
132	–	Normal/Heavy	1321-3R160-C	1321-3RA160-C	1321-3R160-C	1321-3RA160-C
–	150	Normal/Heavy	1321-3R160-C	1321-3RA160-C	1321-3R160-C	1321-3RA160-C
160	–	Normal	1321-3R160-C	1321-3RA160-C	1321-3R160-C	1321-3RA160-C
		Heavy	1321-3RB200-C	1321-3RAB200-C	1321-3RB200-C	1321-3RAB200-C
–	200	Normal/Heavy	1321-3R200-C	1321-3RA200-C	1321-3R200-C	1321-3RA200-C
200	–	Normal	1321-3RB200-C	1321-3RAB200-C	1321-3RB200-C	1321-3RAB200-C
		Heavy	1321-3RB200-C	1321-3RAB200-C	1321-3RB250-C	1321-3RAB250-C
		Heavy	1321-3R250-C	1321-3RA250-C	1321-3R250-C	1321-3RA250-C
–	250	Normal/Heavy	1321-3RB250-C	1321-3RAB250-C	1321-3RB250-C	1321-3RAB250-C
–	300	Normal/Heavy	1321-3RB320-C	1321-3RAB320-C	1321-3RB320-C	1321-3RAB320-C
250	–	Normal/Heavy	1321-3RB320-C	1321-3RAB320-C	1321-3RB320-C	1321-3RAB320-C
–	350	Light/Normal/Heavy	1321-3RB400-C	1321-3RAB400-C	1321-3RB400-C	1321-3RAB400-C
–	400	Light/Normal/Heavy	1321-3RB400-C	1321-3RAB400-C	1321-3RB400-C	1321-3RAB400-C
300	–	Heavy	1321-3RB400-C	1321-3RAB400-C	1321-3RB400-C	1321-3RAB400-C
–	450	Light/Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
315	–	Light/Normal	1321-3RB400-C	1321-3RAB400-C	1321-3RB400-C	1321-3RAB400-C
–	500	Light/Normal/Heavy	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
355	–	Light/Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
–	550	Light	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
375	–	Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
400	–	Light/Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
450	–	Light/Normal/Heavy	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
500	–	Light/Normal	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
500	–	Heavy	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
530	–	Light	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
–	600	Normal/Heavy	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
–	700	Light/Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
560	–	Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
–	750	Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
630	–	Light/Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
–	800	Light/Normal/Heavy	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
710	–	Light/Normal/Heavy	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	900	Light/Normal/Heavy	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
750	–	Normal	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	950	Light/Normal	1321-3R1000-C	1321-3RA1000-C	1321-3R1000-C	1321-3RA1000-C
800	–	Light/Normal/Heavy	1321-3R1000-C	1321-3RA1000-C	1321-3R1000-C	1321-3RA1000-C
–	1000	Light/Normal	1321-3R1000-C	1321-3RA1000-C	1321-3R1000-C	1321-3RA1000-C
850	–	Light	1321-3R1000-C	1321-3RA1000-C	1321-3R1000-C	1321-3RA1000-C
–	1100	Light	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾
900	–	Light/Normal	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾
1000	–	Light	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾	1321-3R600-C ⁽¹⁾	1321-3RA600-C ⁽¹⁾

600...690V, 50/60 Hz, Three-phase, 5% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
1100	–	Light/Normal	1321-3R600-C ⁽²⁾	1321-3RA600-C ⁽²⁾	1321-3R600-C ⁽²⁾	1321-3RA600-C ⁽²⁾
–	1200	Light	1321-3R600-C ⁽²⁾	1321-3RA600-C ⁽²⁾	1321-3R600-C ⁽²⁾	1321-3RA600-C ⁽²⁾
1500	–	Light/Normal	1321-3R600-C ⁽²⁾	1321-3RA600-C ⁽²⁾	1321-3R600-C ⁽²⁾	1321-3RA600-C ⁽²⁾
–	1500	Light	1321-3R600-C ⁽²⁾	1321-3RA600-C ⁽²⁾	1321-3R600-C ⁽²⁾	1321-3RA600-C ⁽²⁾

(1) Requires two reactors that are wired in parallel.

(2) Requires three reactors that are wired in parallel.

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Local Technical Support Phone Numbers	Locate the phone number for your country.	www.rockwellautomation.com/global/support/get-support-now.page
Direct Dial Codes	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	www.rockwellautomation.com/global/support/direct-dial.page
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